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(copd OR "Pulmonary Disease, Chronic Obstructive"[Mesh])

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Eur Respir J

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. 2025 Jan 30;65(1):2400516.

doi: 10.1183/13993003.00516-2024. Print 2025 Jan.

[20-year trends in excess costs of COPD](#)

[Joseph Emil Amegadzie](#)<sup>1,2</sup>, [Jeenat Mehareen](#)<sup>1</sup>, [Amir Khakban](#)<sup>1</sup>, [Phalgun Joshi](#)<sup>2</sup>, [Chris Carlsten](#)<sup>2,3</sup>, [Mohsen Sadatsafavi](#)<sup>4,2</sup>

Affiliations Expand

- PMID: 39467610
- PMCID: [PMC11780723](#)
- DOI: [10.1183/13993003.00516-2024](#)

Abstract

**Background:** Several major risk factors for COPD, such as population ageing, smoking rates and air pollution levels, are rapidly changing, causing inevitable changes in the population burden of COPD. We determined the excess direct costs of COPD and their trend from 2001 to 2020.

**Methods:** Using administrative health data from British Columbia, Canada, we created a retrospective matched cohort of physician-diagnosed COPD patients and non-COPD individuals. Excess direct medical costs (in 2020 Canadian dollars (CAD)) were estimated by analysing hospital records, outpatient services, medications and community care services. Comorbidity classes were assessed using International Classification of Diseases codes. Excess COPD costs were estimated as the adjusted difference in direct medical costs between the COPD and non-COPD cohorts.

**Results:** There were 208 554 and 404 703 individuals in the COPD and non-COPD cohorts, respectively (47.8% female; mean baseline age 69.1 and 68.2 years, respectively). Direct medical costs for COPD were CAD 9224 per patient-year compared to CAD 3396 per patient-year for non-COPD, giving rise to excess costs of CAD 5828 (95% CI 5759-5897) per patient-year. Excess costs increased by 48% over the study period. Excess costs due to comorbidities were CAD 3588 (95% CI 3554-3622) per patient-year, with cardiovascular-related conditions alone exceeding the costs attributed to COPD (CAD 1375 *versus* 904 per patient-year).

**Conclusions:** Despite multifaceted prevention and management initiatives, COPD-related economic burden is increasing, with the majority of costs due to comorbid conditions. Rising per-patient costs, combined with the flat or increasing prevalence of COPD in many jurisdictions, indicates a significant increase in COPD burden.

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Conflict of interest statement

Conflict of interest: The authors have no potential conflicts of interest to disclose.

Comment in

- [Real-world health data potential for economic insights in COPD.](#)

Bedouch P, Chanoine S. Eur Respir J. 2025 Jan 30;65(1):2402188. doi: 10.1183/13993003.02188-2024. Print 2025 Jan. PMID: 39884756 No abstract available.

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. 2025 Jan 29:S0953-6205(25)00026-3.

doi: 10.1016/j.ejim.2025.01.016. Online ahead of print.

**[Risk trajectory of cardiovascular events after an exacerbation of chronic obstructive pulmonary disease: A systematic review and meta-analysis](#)**

**[Edoardo Pirera](#)**<sup>1</sup>, **[Domenico Di Raimondo](#)**<sup>2</sup>, **[Lucio D'Anna](#)**<sup>3</sup>, **[Antonino Tuttolomondo](#)**<sup>2</sup>

Affiliations Expand

- PMID: 39884921
- DOI: [10.1016/j.ejim.2025.01.016](https://doi.org/10.1016/j.ejim.2025.01.016)

**Abstract**

**Background:** Exacerbations of chronic obstructive pulmonary disease (COPD) are known to increase the risk of cardiovascular (CV) events and mortality. However, the temporal trend of this risk has not fully elucidated. This systematic review and meta-analysis aims to quantify the risk of CV events after COPD exacerbations over different time periods.

**Objectives:** To assess the temporal association between CV events, including acute coronary syndrome (ACS), heart failure (HF), acute cerebrovascular events, arrhythmia and all-cause mortality after the onset of COPD exacerbations in the following timepoints: 1-30 and 31-180 days; 1-7, 8-14, 15-30, 31-180, 181-365 and >365 days.

**Methods:** A comprehensive literature search was conducted in PubMed, Embase, Web of Science and Cochrane databases, identifying observational studies that reported CV outcomes following COPD exacerbations. Studies were included if they enrolled adults diagnosed with COPD and compared CV event rates during exacerbation and non-exacerbation periods (PROSPERO, CRD42024561490).

**Results:** Sixteen studies with over 1.8 million participants were included. Our meta-analysis demonstrated a significantly increased risk of ACS, HF, cerebrovascular events and arrhythmia, with the highest magnitude of risk observed in the period 1-30 days following an exacerbation. This increased risk showed a decline in time points 31-180, 181-365 days and remained persistently higher for ACS even one year after an acute exacerbation. Notably, the risk of HF was found to be greater compared to the other CV outcomes.

**Conclusion:** COPD exacerbations significantly increase the risk of acute CV events, particularly within the first 30 days. Optimal strategies to reduce cardiopulmonary risk are needed.

**Keywords:** Cardiopulmonary risk; Cardiovascular event; Exacerbation of COPD.

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**Conflict of interest statement**

**Declaration of competing interest** We declare no competing interests.

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3

**BMC Public Health**

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. 2025 Jan 29;25(1):366.

doi: 10.1186/s12889-025-21450-y.

[Associations between sedentary behaviour and sarcopenia among patients aged 40 and older with chronic obstructive pulmonary disease: a cross-sectional study](#)

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**Affiliations Expand**

- PMID: 39881257
- PMCID: [PMC11776302](#)
- DOI: [10.1186/s12889-025-21450-y](#)

**Abstract**

**Background:** Patients with chronic obstructive pulmonary disease (COPD) and sarcopenia experience poorer clinical prognosis. Although sedentary behaviour (SB) is common risk factor for COPD, its relationship with sarcopenia in this specific population remains unclear.

**Methods:** This is a cross-sectional survey of participants aged 40 and above with COPD, involving 27 communities and 2 hospitals' outpatient departments. The definition of sarcopenia was in accordance with the Asian Expert Consensus Criteria for sarcopenia. SB and physical activity (PA) were evaluated using the short form of the international physical activity questionnaires (IPAQ-SF). SB was categorized into 4 categories: less than 4 h/day, 4 to 6 h/day, 6 to 8 h/day, and 8 h or more per day. PA was classified into light-intensity and moderate-to-vigorous intensity physical activity (LPA and MVPA). Multiple logistic regression and restricted cubic spline (RCS) were performed to investigate the rates of association between sarcopenia and SB. Subgroups was analysed by gender.

**Results:** A total of 414 COPD patients with complete information were included in this trial. The overall prevalence of sarcopenia was 22.9%. Participants with sarcopenia had longer of SB ( $P = 0.008$ ) and less MVPA ( $P < 0.001$ ) compared to those without sarcopenia. After adjustment for confounders, SB showed a significant association with sarcopenia (adjusted  $\beta = 1.47$ , 95% CI = 1.28-1.68). The participants who spent 6 or more hours on SB had a greater odds ratio for sarcopenia (= 6-8 h: adjusted OR = 2.97, 95% CI = 1.14-7.70; > 8 h: OR = 9.14, 95% CI = 3.59-23.22) than the participants who spent less than 4 h. The results of RCS indicated that when SB exceeded 5.7 h/day, a trend towards a significant increasing prevalence of sarcopenia was observed with increased SB. This trend was also observed across genders, differing only in the threshold values (male: SB = 5.7 h; female: SB = 8.0 h).

**Conclusion:** SB was an independent determinant of sarcopenia, independent of MVPA, and the prevalence of sarcopenia increases as SB increases within a certain range. This study advocated for the integration of SB in the self-management strategies for patients with COPD. Regardless of their engagement in MVPA, it was crucial to regulate SB.

**Keywords:** COPD; Physical activity; Sarcopenia; Sedentary behaviour.

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**Conflict of interest statement**

**Declarations.** Ethics approval and consent to participate: The study was approved by the Ethics Committee of the School of Nursing and Rehabilitation, Shandong University, China (2019-R-022). Written informed consent was obtained from all participants before data collection. Consent for publication: Not applicable. **Competing interests:** The authors declare no competing interests.

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Am J Respir Crit Care Med

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. 2025 Jan 29.

doi: 10.1164/rccm.202412-2461ED. Online ahead of print.

[Echocardiographic Endophenotypes of Chronic Obstructive Pulmonary Disease: A Step Towards Personalized Medicine](#)

[Benjamin H Freed](#)<sup>1</sup>, [Thenappan Thenappan](#)<sup>2</sup>

Affiliations Expand

- PMID: 39879550
- DOI: [10.1164/rccm.202412-2461ED](https://doi.org/10.1164/rccm.202412-2461ED)

*No abstract available*

Keywords: Emphysema; HFpEF; Heart failure; pulmonary hypertension; pulmonary microvascular blood flow.

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Clin Chem Lab Med

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. 2024 Jul 30;63(1):193-207.

doi: 10.1515/cclm-2024-0724. Print 2025 Jan 29.

**[Detection of serum CC16 by a rapid and ultrasensitive magnetic chemiluminescence immunoassay for lung disease diagnosis](#)**

**[Kaili Duan](#)<sup>1</sup>, [Yu Xiang](#)<sup>2</sup>, [Yilong Deng](#)<sup>3</sup>, [Junman Chen](#)<sup>1</sup>, [Ping Liu](#)<sup>1</sup>**

Affiliations Expand

- PMID: 39072498
- DOI: [10.1515/cclm-2024-0724](https://doi.org/10.1515/cclm-2024-0724)

Abstract

**Objectives:** It has been reported that serum Clara cell secreted protein 16 (CC16) is a potential biomarker for lung injury diseases, but currently, there is no other method that is faster, more accurate, or more sensitive being applied in clinical practice apart from ELISA. The current study was designed to establish a magnetic nanoparticles chemiluminescence immunoassay (MNPs-CLIA) for highly sensitive automated detection of serum Clara cell secretory protein 16 (CC16), and validated its diagnostic performance for lung disease.

**Methods:** The study included the expression of CC16 recombinant protein, the preparation and screening of its monoclonal antibody (MAb), as well as the construction, optimization and analytical evaluation of the MNPs-CLIA method. The clinical application value of this method was investigated by detecting CC16 level in 296 serum samples.

**Results:** The linear range of the MNPs-CLIA assay system was 0.2-50 ng/mL, and the limit of detection was 0.037 ng/mL. Performance parameters such as specificity, recovery rate, and precision can meet the industry standards of *in vitro* diagnostic reagents. The established method reveals consistent results with ELISA ( $R^2=0.9962$ ) currently used clinically, and it also exhibits satisfactory diagnostic efficacy of silicosis, chronic obstructive pulmonary disease (COPD), and pulmonary sarcoidosis, with areas under the curve (AUC) of 0.9748, 0.8428 and 0.9128, respectively.

**Conclusions:** Our established MNPs-CLIA method has the advantages of automation, high throughput, rapidity, and simplicity, and can be promoted for widely popularized in clinical applications. MNPs-CLIA detection of serum CC16 has efficient diagnostic potentiality for predicting and diagnosing lung diseases.

Keywords: CC16; biomarkers; chemiluminescence; magnetic nanoparticle; monoclonal antibody.

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- [50 references](#)

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6

Comparative Study

BMC Pulm Med

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. 2025 Jan 28;25(1):45.

doi: 10.1186/s12890-025-03507-1.

[Comparing spirometry, impulse oscillometry with computed tomography for assessing small airway dysfunction in subjects with and without chronic obstructive pulmonary disease](#)

[Suyin Huang](#) <sup>#1,2</sup>, [Fan Wu](#) <sup>#1,2</sup>, [Zhishan Deng](#) <sup>1</sup>, [Jieqi Peng](#) <sup>1,2</sup>, [Cuiqiong Dai](#) <sup>1</sup>, [Lifei Lu](#) <sup>1</sup>, [Kunning Zhou](#) <sup>1</sup>, [Xiaohui Wu](#) <sup>1</sup>, [Qi Wan](#) <sup>1</sup>, [Gaoying Tang](#) <sup>1</sup>, [Shengtang Chen](#) <sup>3</sup>, [Changli Yang](#) <sup>3</sup>, [Yongqing Huang](#) <sup>4</sup>, [Shuqing Yu](#) <sup>4</sup>, [Pixin Ran](#) <sup>5,6</sup>, [Yumin Zhou](#) <sup>7,8</sup>

Affiliations Expand

- PMID: 39875840
- PMCID: [PMC11773755](#)

- DOI: [10.1186/s12890-025-03507-1](https://doi.org/10.1186/s12890-025-03507-1)

## Abstract

**Background:** Studies on consistency among spirometry, impulse oscillometry (IOS), and histology for detecting small airway dysfunction (SAD) remain scarce. Considering invasiveness of lung histopathology, we aimed to compare spirometry and IOS with chest computed tomography (CT) for SAD detection, and evaluate clinical characteristics of subjects with SAD assessed by these three techniques.

**Methods:** We collected baseline data from the Early COPD (ECOPD) study. CT-defined SAD was defined as parametric response mapping quantifying SAD ( $PRM^{SAD} \geq 15\%$ ). Spirometry-defined SAD was defined as at least two of maximal mid-expiratory flow (MMEF), forced expiratory flow 50% (FEF50), and forced expiratory flow 75% (FEF75) less than 65% of predicted. IOS-defined SAD was defined as peripheral airway resistance  $R5 - R20 > 0.07$  kPa/L/s. The consistency of spirometry, IOS and CT for diagnosing SAD was assessed using Kappa coefficient. Correlations among the three techniques-measured small airway function parameters were assessed by Spearman correlation analysis.

**Results:** 2055 subjects were included in the final analysis. There was low agreement in SAD assessment between spirometry and CT (Kappa = 0.126, 95% confidence interval [CI]: 0.106 to 0.146,  $p < 0.001$ ), between IOS and CT (Kappa = 0.266, 95% CI: 0.219 to 0.313,  $p < 0.001$ ), as well as among spirometry, IOS, and CT (Kappa = 0.056, 95% CI: 0.029 to 0.082,  $p < 0.001$ ). The correlation was moderate ( $|r|: 0.5$  to  $0.7$ ,  $p < 0.05$ ) between spirometry and CT-measured small airway function parameters, and weak ( $|r| < 0.4$ ,  $p < 0.05$ ) between IOS and CT-measured small airway function parameters. Only spirometry-defined SAD group had more lower lung function ( $FEV_1/FVC$ : adjusted difference =  $-10.7\%$ , 95% CI:  $-13.5\%$  to  $-7.8\%$ ,  $p < 0.001$ ) and increased airway wall thickness (Pi 10: adjusted difference =  $0.3$  mm, 95% CI:  $0$  to  $0.6$  mm,  $p = 0.046$ ) than only CT-defined SAD group. Only IOS-defined SAD group had better lung function ( $FEV_1/FVC$ : adjusted difference =  $3.9\%$ , 95% CI:  $1.9$  to  $5.8\%$ ,  $p < 0.001$ ), less emphysema (inspiratory LAA-<sub>950</sub>: adjusted difference =  $-2.1\%$ , 95% CI:  $-3.1\%$  to  $-1.1\%$ ,  $P < 0.001$ ;  $PRM^{Emph}$ : adjusted difference =  $-2.3\%$ , 95% CI:  $-3.2\%$  to  $-1.4\%$ ,  $p < 0.001$ ), and thicker airway wall (Pi 10: adjusted difference =  $0.2$  mm, 95% CI:  $0.1$  mm to  $0.4$  mm,  $p = 0.005$ ) than only CT-defined SAD group.

**Conclusions:** There was low consistency in the assessment of SAD between spirometry and CT, between IOS and CT, as well as among spirometry, IOS, and CT.

**Clinical trial number:** Not applicable.

**Keywords:** Computed tomography; Impulse oscillometry; Parametric response mapping; Small airway dysfunction; Spirometry.

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## Conflict of interest statement

**Declarations.** Ethical approval and consent to participate: The study was conducted in accordance with the Declaration of Helsinki and approved by the Ethics Committee of The First Affiliated Hospital of Guangzhou Medical University (No. 2018-53). The participants were made fully aware of the purpose of study, and all subjects have signed the informed consent before the examination. All methods

were carried out in accordance with relevant guidelines and regulations. The written informed consent was obtained from all participants. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

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Review

Respir Med

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. 2025 Jan 27:107969.

doi: 10.1016/j.rmed.2025.107969. Online ahead of print.

[Global prevalence of fatigue in patients with chronic obstructive pulmonary disease: a systematic review and meta-analysis](#)

[Wenting Shi](#)<sup>1</sup>, [Tao Li](#)<sup>2</sup>, [Yingjie Leng](#)<sup>3</sup>, [Qinglu Li](#)<sup>3</sup>, [Nan Wang](#)<sup>3</sup>, [Guorong Wang](#)<sup>4</sup>

Affiliations Expand

- PMID: 39880216
- DOI: [10.1016/j.rmed.2025.107969](#)

Abstract

**Background:** Fatigue is a common symptom in patients with chronic obstructive pulmonary disease (COPD). Published studies of fatigue among patients with COPD have presented diverse findings that may reflect variations in research methods as well as actual population differences.

**Objective:** To estimate the worldwide prevalence of fatigue in patients with COPD and its associated epidemiological characteristics.

**Methods:** The Cochrane Library, Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, Web of Science, Embase, China National Knowledge Infrastructure (CNKI), Wanfang Database, China Science and Technology Journal Database (VIP), and China Biology Medicine disc (CBM) databases were searched for articles from their inception date through August 2024. The pooled prevalence of fatigue in patients with COPD and 95% confidence interval (CI) were calculated using a random-effects model with Stata 15.0 software. Agency for Healthcare and Research and Quality (AHRQ) indicators and the Newcastle-Ottawa Scale (NOS) were used to evaluate the quality of the included studies.

**Results:** The 25 included studies involved 6830 patients. The meta-analysis results showed a 59% (95% CI: 52%-66%) pooled prevalence of fatigue in patients with COPD. Subgroup analysis indicated that the prevalence varied significantly by region, setting, assessment tool, and publication year.

**Conclusions:** Fatigue is a common symptom among patients with COPD worldwide. To reduce the negative effects of fatigue in these patients, clinicians should actively explore the mechanisms of fatigue occurrence and its risk factors to provide a basis for further research.

**Keywords:** Chronic obstructive pulmonary disease; Fatigue; Meta-analysis; Prevalence; Systematic review.

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Conflict of interest statement

**Declaration of Competing Interest** The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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. 2025 Jan 27:15:26335565251315876.

doi: 10.1177/26335565251315876. eCollection 2025 Jan-Dec.

### [The usefulness of Charlson Comorbidity Index \(CCI\) scoring in predicting all-cause mortality in Outpatients with Clinical Diagnoses of COPD](#)

[Kevin Ly](#)<sup>1</sup>, [Dorothy Wakefield](#)<sup>2</sup>, [Richard ZuWallack](#)<sup>2</sup>

#### Affiliations Expand

- PMID: 39877897
- PMCID: [PMC11773518](#)
- DOI: [10.1177/26335565251315876](#)

#### Abstract

**Background:** Since comorbid conditions are frequently present in chronic obstructive pulmonary disease (COPD) and affect outcome, a composite scoring system to quantify comorbidity might be helpful in assessing mortality risk.

**Methods:** We tested the hypothesis that the Charlson Comorbidity Index (CCI) score at the time of an outpatient medical clinic encounter for COPD predicts all-cause mortality. Cox Proportional Hazards analyses were used in 200 randomly selected patients to relate CCI scores to all-cause mortality out to 5 years.

**Results:** Mean age was  $62 \pm 10$  years, 56% were female, FEV1 was 62%, CCI was  $3.08 \pm 2.30$ , and 30% had a CCI  $\geq 4$ , indicating 3 or more comorbid conditions. All-cause mortality was 8.5% and 20% at 3 and 5 years, respectively. In univariate testing, the CCI score and hospitalizations predicted mortality, but FEV1 did not. In multivariable testing, which included covariates of age, sex, socioeconomic status, race, FEV1 percent-predicted, and all-cause hospitalizations in the preceding year, CCI expressed as a continuous variable strongly predicted mortality: hazard ratio (HR) 1.38 for each unit increase in the score ( $p < 0.0001$ ). While 1 or 2 comorbid conditions were not significantly related to mortality, 3 or more comorbid conditions (compared to none) strongly predicted mortality: HR 9.80, 95% CI 3.80 to 25.00.

**Conclusion:** Comorbidity, assessed with the CCI, is strongly predictive of mortality in outpatients with a clinical diagnosis of COPD, and this relationship appears to be non-linear. This instrument may be useful in determining prognosis in this population.

Keywords: CCI; COPD; Comorbidity; charlson comorbidity index; mortality.

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#### Conflict of interest statement

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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9

#### Review

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. 2025 Jan 27.

doi: 10.1007/s00391-025-02409-5. Online ahead of print.

[Diagnosis of chronic obstructive pulmonary disease \(COPD\) in older patients : Consensus statement of the Working Group on Pneumology in Older Patients](#)

[C Stenmanns](#)<sup>1</sup>, [N Netzer](#)<sup>2</sup>, [C Münks-Lederer](#)<sup>3</sup>, [A Schlesinger](#)<sup>4</sup>, [S Stieglitz](#)<sup>5</sup>, [H Frohnhofen](#)<sup>6</sup>

#### Affiliations Expand

- PMID: 39871051
- DOI: [10.1007/s00391-025-02409-5](#)

#### Abstract

in [English, German](#)

Chronic obstructive pulmonary disease (COPD) is a frequent disease from which approximately 8% of individuals aged 40 years and above suffer. The prevalence increases up to fivefold as age advances. Following an introduction including the etiology, measurement, characteristic features and classification of COPD, this article presents the consensus recommendations of the German Working Group on Pneumology in Older Patients. These include statements on the screening for frailty, dysphagia, malnutrition and cognitive impairment. The results are summarized with the final conclusion that adequate treatment of COPD can also slow the progression of cognitive decline and could potentially prevent or delay the onset of dementia.

**Keywords:** Classification; Cognitive impairment; Dysphagia; Frailty; Recommendations.

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#### Conflict of interest statement

**Declarations. Conflict of interest:** C. Stenmanns, N. Netzer, C. Münks-Lederer, A. Schlesinger and S. Stieglitz declare that they have no competing interests. H. Frohnhofen received speaker honoraria from Heel, Amgen, Hennig, Idorsia, Johnson&Johnson and BMS. **Ethical standards:** For this article no studies with human participants or animals were performed by any of the authors. All studies mentioned were in accordance with the ethical standards indicated in each case.

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10

Editorial

Expert Rev Respir Med

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. 2025 Jan 27:1-3.

doi: 10.1080/17476348.2025.2459304. Online ahead of print.

[The changing role of opioids for symptom management in people with advanced lung disease](#)

[Amy Pascoe](#)<sup>1</sup>, [Natasha Smallwood](#)<sup>1 2</sup>

Affiliations Expand

- PMID: 39870419
  
- DOI: [10.1080/17476348.2025.2459304](#)

*No abstract available*

Keywords: Opioids; breathlessness; chronic obstructive pulmonary disease; chronic respiratory disease; interstitial lung disease.

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Health Sci Rep

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. 2025 Jan 26;8(1):e70395.

doi: 10.1002/hsr2.70395. eCollection 2025 Jan.

[Chronic Obstructive Pulmonary Disease Patients With Community-Acquired Pneumonia on Inhaled Corticosteroid Therapy: A Comprehensive Analysis of Risk Factors, Disease Burden, and Prevention Strategies](#)

[Muhammad Muneeb Hassan](#)<sup>1,2</sup>, [Sheikh Muhammad Sikandar](#)<sup>2</sup>, [Farrukh Jamal](#)<sup>1</sup>, [Muhammad Ameer](#)<sup>1</sup>, [Alpha Kargbo](#)<sup>3</sup>

#### Affiliations Expand

- PMID: 39872908
- PMCID: [PMC11770223](#)
- DOI: [10.1002/hsr2.70395](#)

#### Abstract

**Background:** Chronic obstructive pulmonary disease (COPD) patients commonly exhibit significant morbidity and experience a diminished quality of life. Since there has been no prior research on pneumonia in our study population, we carried out this study to learn more about the situation.

**Methods:** A retrospective analysis of 912 COPD patients with CAP who were receiving ICS treatment at the DHQ Hospital in Muzaffargarh, Punjab, Pakistan was conducted. Study began in February 2022 and ended in February 2023. Using multinomial logistic regression, the odds ratio and relative risk and Kaplan-Meier curves showed time-to-death and recovery by COPD status.

**Results:** Patients with COPD having a smoking history from 25 pack years and above had 22.791 higher odds of CAP (95% CI: 20.413-31.515), 21.527 higher odds of HTN (95% CI: 12.323-57.103), 16.955 higher odds of diabetes (95% CI: 22.954-29.331), and 13.964 higher odds of death in severity without COVID-19 vaccination (95% CI: 5.988-32.561) compared to patients with COPD having a smoking history from 10 to 15 pack years.

**Conclusion:** COPD patients with a shorter ICS duration had a lower CAP risk, and vice versa, while vaccinated patients had a less severe disease as compared to non-vaccinated patients.

**Keywords:** COPD; SARS-CoV-2; community-acquired pneumonia; coronavirus disease 2019; smoking history.

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#### Conflict of interest statement

The authors declare no conflicts of interest.

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Respirology

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. 2025 Jan 26.

doi: 10.1111/resp.14882. Online ahead of print.

[Lifetime Body Mass Index Trajectories and Contrasting Lung Function Abnormalities in Mid-Adulthood: Data From the Tasmanian Longitudinal Health Study](#)

[Gulshan B Ali](#)<sup>1</sup>, [Adrian J Lowe](#)<sup>1,2</sup>, [E Haydn Walters](#)<sup>1,3</sup>, [Jennifer L Perret](#)<sup>1</sup>, [Bircan Erbas](#)<sup>4</sup>, [Caroline J Lodge](#)<sup>1,2</sup>, [Gayan Bowatte](#)<sup>1</sup>, [Paul S Thomas](#)<sup>5</sup>, [Garun S Hamilton](#)<sup>6,7</sup>, [Bruce R Thompson](#)<sup>8</sup>, [David P Johns](#)<sup>1</sup>, [John L Hopper](#)<sup>1</sup>, [Michael J Abramson](#)<sup>9</sup>, [Dinh S Bui](#)<sup>1</sup>, [Shyamali C Dharmage](#)<sup>1,2</sup>

Affiliations Expand

- PMID: 39865446
- DOI: [10.1111/resp.14882](https://doi.org/10.1111/resp.14882)

Abstract

**Background and objective:** The impact of lifetime body mass index (BMI) trajectories on adult lung function abnormalities has not been investigated previously. We investigated associations of BMI trajectories from childhood to mid-adulthood with lung function deficits and COPD in mid-adulthood.

**Methods:** Five BMI trajectories (n = 4194) from age 5 to 43 were identified in the Tasmanian Longitudinal Health Study. Lung function outcomes were defined using spirometry at 45 and 53 years. Associations between these BMI trajectories and lung function outcomes were investigated using multivariable regression.

**Results:** Compared to the average BMI trajectory, the child's average-increasing BMI trajectory was associated with greater FVC decline from 45 to 53 years ( $\beta = -178$  mL; 95% CI -300.6, -55.4), lower FRC, ERV and higher TLco at 45 years, lower FVC (-227 mL; -345.3, -109.1) and higher TLco at 53 years. The High BMI trajectory was also associated with lower FRC, ERV and higher TLco at 45 years, while spirometric restriction (OR = 6.9; 2.3, 21.1) and higher TLco at 53 years. The low BMI trajectory

was associated with an obstructive picture: lower FEV<sub>1</sub> (-124 mL; -196.4, -51.4) and FVC (-91 mL; -173.4, -7.7), and FEV<sub>1</sub>/FVC (-1.2%; -2.2, -0.1) and higher ERV and lower TLco at 45 and 53 years. A similar pattern was found at 53 years. No associations were observed with spirometrically defined COPD.

**Conclusion:** Our findings revealed contrasting lung function abnormalities were associated with high, subsequently increasing, and low BMI trajectories. These results emphasise the importance of tracking changes in BMI over time and the need to maintain an average BMI trajectory (BMI-Z-score 0 at each time point) throughout life.

**Keywords:** COPD; body mass index trajectories; lifetime growth patterns; lifetime obesity; lung function decline; obesity trajectories; obstructive-lung function; poor lung function; restrictive-lung function.

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Int J Chron Obstruct Pulmon Dis

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. 2025 Jan 25:20:193-205.

doi: 10.2147/COPD.S501635. eCollection 2025.

[Exploring the Causal Relationship Between Frailty and Chronic Obstructive Pulmonary Disease: Insights From Bidirectional Mendelian Randomization and Mediation Analysis](#)

[Zewen Cheng](#)<sup>1</sup>, [Jian Wu](#)<sup>1</sup>, [Chun Xu](#)<sup>2</sup>, [Xiaokun Yan](#)<sup>1</sup>

Affiliations [Expand](#)

- PMID: 39881812
- PMCID: [PMC11776522](#)
- DOI: [10.2147/COPD.S501635](#)

## Abstract

**Background:** Observational studies have underscored a robust association between frailty and chronic obstructive pulmonary disease (COPD), yet the causality remains equivocal.

**Methods:** This study employed bidirectional two-sample Mendelian randomization (MR) analysis. Univariable MR investigated the causal relationship between frailty and COPD. Genetic correlation was assessed using linkage disequilibrium score (LDSC) regression. Multivariable MR and mediation analysis explored the influence of various confounders and their mediating effects. The primary analytic approach was inverse variance weighted (IVW).

**Results:** LDSC analysis revealed moderate genetic correlations between frailty and Global Biobank Meta-Analysis Initiative (GBMI) COPD ( $r_g = 0.643$ ,  $P = 6.66 \times 10^{-62}$ ) as well as FinnGen COPD ( $r_g = 0.457$ ,  $P = 8.20 \times 10^{-28}$ ). IVW analysis demonstrated that frailty was associated with increased risk of COPD in both the GBMI cohort (95% CI, 1.475 to 2.158;  $P = 2.40 \times 10^{-9}$ ) and the FinnGen database (1.411 to 2.434;  $9.02 \times 10^{-6}$ ). Concurrently, COPD was identified as a susceptibility factor for frailty ( $P < 0.05$ ). These consistent findings persisted after adjustment for potential confounders in MVMR. Additionally, mediation analysis revealed that walking pace mediated 19.11% and 15.40% of the impact of frailty on COPD risk, and 17.58% and 23.26% of the effect of COPD on frailty risk in the GBMI and FinnGen cohorts, respectively.

**Conclusion:** This study has strengthened the current evidence affirming a reciprocal causal relationship between frailty and COPD, highlighting walking pace as a pivotal mediator.

**Keywords:** COPD; Mendelian randomization; causality; frailty; mediation analysis.

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## Conflict of interest statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

- [50 references](#)
- [6 figures](#)

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## Review

## Respir Med

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. 2025 Jan 25:107956.

doi: 10.1016/j.rmed.2025.107956. Online ahead of print.

## [Efficacy and safety of long-acting muscarinic antagonists in COPD: a meta-analysis and meta-regression with a focus on aging](#)

[Luigino Calzetta](#)<sup>1</sup>, [Elena Pistocchini](#)<sup>2</sup>, [Rossella Laitano](#)<sup>2</sup>, [Shima Gholamalishahi](#)<sup>2</sup>, [Mario Cazzola](#)<sup>2</sup>, [Paola Rogliani](#)<sup>2</sup>

## Affiliations Expand

- PMID: 39870144
- DOI: [10.1016/j.rmed.2025.107956](#)

## Abstract

The increasing global elderly population, projected to reach 20% of individuals aged 65 and over by 2030, faces significant pulmonary challenges, including chronic obstructive pulmonary disease (COPD). Aging is associated with a natural decline in lung function and structural changes that exacerbate respiratory issues. COPD, characterized by chronic respiratory symptoms and airflow obstruction, presents a unique challenge in older patients due to the accelerated decline in lung function. Acetylcholine plays a pivotal role in airway dynamics through muscarinic acetylcholine receptors, particularly M<sub>3</sub> subtype, which mediates bronchoconstriction. The efficacy of long-acting muscarinic antagonists (LAMA) may differ in older adults, with evidence suggesting that these patients can respond favorably to LAMA treatment. This study utilized meta-analysis and meta-regression

to explore the efficacy and safety of LAMA in treating COPD, while considering aging as a potential modifier. A meta-analysis of Phase III randomized controlled trials highlighted significant improvements in trough forced expiratory volume in the 1<sup>st</sup> second when LAMA were compared to placebo (PCB). Furthermore, the meta-regression revealed a trend suggesting older adults may experience enhanced benefits from LAMA therapy, particularly with once-daily regimens. Safety outcomes, including serious adverse events (SAE), cardiovascular SAE, and mortality, were not modulated by age when comparing LABA to PCB. Overall, these findings support the use of LAMA in elderly COPD patients and underscore the need for tailored treatment strategies to improve clinical outcomes in this vulnerable population.

**Keywords:** Ageing; COPD; efficacy; long-acting muscarinic antagonist; meta-analysis; meta-regression; safety.

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#### Conflict of interest statement

**Declaration of Competing Interest** The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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. 2025 Jan 25;14(1):21.

doi: 10.1007/s13668-025-00613-8.

# [The Role of Nutrition and Nutritional Supplements in the Prevention and Treatment of Malnutrition in Chronic Obstructive Pulmonary Disease: Current Approaches in Nutrition Therapy](#)

[Tuğba Tuna](#)<sup>1</sup>, [Gülhan Samur](#)<sup>2</sup>

Affiliations Expand

- PMID: 39862339
- PMCID: [PMC11762775](#)
- DOI: [10.1007/s13668-025-00613-8](#)

Abstract

**Purpose of review:** Malnutrition is a significant comorbidity in Chronic Obstructive Pulmonary Disease (COPD), contributing to disease progression and reduced quality of life. This narrative review examines the role of nutritional therapy in the prevention and management of malnutrition in COPD, emphasizing evidence-based approaches and their clinical implications.

**Recent findings:** COPD patients face increased metabolic demands, systemic inflammation, and reduced dietary intake, resulting in muscle wasting, sarcopenia, and cachexia. Recent evidence highlights the efficacy of targeted nutritional strategies, including essential amino acid supplementation, omega-3 fatty acids, vitamin D, and antioxidants, in improving respiratory function, muscle strength, and patient well-being. Comprehensive nutritional assessments and personalized interventions are increasingly recognized as critical components of COPD care. However, long-term efficacy data remain limited. Nutritional therapy plays a pivotal role in managing malnutrition and improving clinical outcomes in COPD. This review synthesizes the latest evidence, identifies gaps in current research, and proposes strategies for integrating personalized nutrition into COPD care. Future studies are needed to establish the long-term benefits of these interventions and to develop tailored nutritional guidelines for COPD patients.

**Keywords:** COPD; Malnutrition; Nutritional supplements; Nutritional therapy; Sarcopenia.

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Conflict of interest statement

Declarations. Competing Interests: The authors declare no competing interests.

- [76 references](#)
- [4 figures](#)

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## "Multimorbidity"[Mesh Terms] OR Multimorbidity[Text Word]

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. 2025 Feb;47(2):e70006.

doi: 10.1111/1467-9566.70006.

[Entangled Illnesses: Embodied Experiences of Managing Multimorbidity](#)

[Venla Oikkonen](#)<sup>1</sup>, [Elina Helosvuori](#)<sup>2</sup>, [Ahalya Ganesh](#)<sup>3</sup>, [Lilli Aini Rokkonen](#)<sup>1</sup>

Affiliations Expand

- PMID: 39874027
- DOI: [10.1111/1467-9566.70006](#)

Abstract

Multimorbidity, meaning multiple long-term conditions impacting a person's health, has become a rising societal and public health issue. The article contributes to the sociological study of chronic illness and multimorbidity by analysing how the blurriness of illnesses and entanglement of symptoms in multimorbidity is experienced and negotiated by people with coexisting chronic conditions. Drawing on qualitative interviews with people who live with endometriosis, fibromyalgia or hormonal migraine in Finland, we show how people with multiple chronic conditions distinguish between evolving symptoms based on past embodied experiences to make decisions about how to best manage their health. We argue that coexisting illnesses become entangled in ambiguous and open-ended ways, which, if left unaddressed, complicates treatment. Our analysis of illness experiences is aligned with the growing body of literature that argues that the single-disease model underlying healthcare systems fails to address the needs of patients living with multiple chronic conditions. Our emphasis on evolving entanglements between illnesses and the blurriness of conditions makes visible crucial discrepancies between lived illness and existing biomedical models and healthcare structures.

**Keywords:** chronic illness; endometriosis; experience; fibromyalgia; hormonal migraine; multimorbidity.

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. 2025 Feb;22(1):e70018.

doi: 10.1111/tct.70018.

[Shattering the Shield: Embracing Complexity in Undergraduate Medical Education](#)

[Cara Bezzina](#)<sup>1,2,3</sup>, [Robert McQuade](#)<sup>2</sup>, [Wendy Lowe](#)<sup>3</sup>, [Frances Mair](#)<sup>1</sup>, [Lindsey Pope](#)<sup>1</sup>

Affiliations Expand

- PMID: 39832492
- PMCID: [PMC11745563](#)
- DOI: [10.1111/tct.70018](#)

Abstract

**Background:** Multimorbidity and patient complexity are increasing, yet undergraduate medical education curricula remain dominated by single disease frameworks, where students are often shielded from exposure to this complexity.

Why this shielding continues to occur is understandable; however, this may leave graduates feeling underprepared for real-world practice. This study aimed to explore medical students' experiences of encountering, managing and dealing with complexity and to provide informed recommendations for integrating complexity into clinical teaching.

**Methodology:** Situated within a constructivist paradigm, this qualitative study involved focus groups (n = 4) with fourth- and fifth-year medical students (n = 17) from two Scottish Universities. Data were analysed using reflexive thematic analysis.

**Findings:** Learners in this study recognised multimorbidity, complex communication and emotionally charged interactions in their definitions of complexity. They described varying levels of exposure to complexity and opportunities to engage meaningfully with complex patients. Students felt that supervisors who shield students from learning opportunities with complex patients, together with a failing healthcare system, were critical limiting factors in their development. Learners emphasised the powerful role of supervisors in their learning experiences, which limited their ability to experiment and learn from productive failure but felt that with guided scaffolding and supervision, teaching and learning in this space could be meaningfully enhanced.

**Conclusion:** Exposure to and engagement with complex patients offer critical learning opportunities that may allow students to explore and better develop skills in managing complexity. With appropriate scaffolding, students can be empowered to embrace complexity in the clinical learning environment, potentially equipping them to care for complex patients.

**Keywords:** complex patients; experiential learning; multimorbidity; productive failure; reflexive thematic analysis; undergraduate medical education.

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**Conflict of interest statement**

The authors declare no conflicts of interest.

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. 2024 Dec 7:43:101411.

doi: 10.1016/j.conctc.2024.101411. eCollection 2025 Feb.

[Operationalizing goal setting as an outcome measure in trials involving patients with frailty, multimorbidity or complexity](#)

[Emma Tenison](#)<sup>1,2</sup>, [Katherine Lloyd](#)<sup>1</sup>, [Yoav Ben-Shlomo](#)<sup>1,3</sup>, [Emily J Henderson](#)<sup>1,2</sup>

Affiliations Expand

- PMID: 39759567
- PMCID: [PMC11699366](#)
- DOI: [10.1016/j.conctc.2024.101411](#)

Abstract

**Background/aims:** In the absence of disease-modifying therapies for Parkinson's disease, much research focuses on improving quality of life, health and wellbeing. It is important to evaluate potential treatments and innovative care models in a robust and standardised way. Disease-specific outcomes have limitations in older people, those with cognitive impairment, multimorbidity, disability or short life expectancy. We aimed to select, and adapt as needed, a primary outcome to evaluate a multicomponent intervention for people with parkinsonism.

**Methods:** The multicomponent Proactive and Integrated Management and Empowerment (PRIME) model of care is being evaluated in the UK within a randomized controlled trial (RCT). We needed a meaningful outcome measure which could capture effects across multiple symptoms and domains; be suitable across the spectrum of disease stage/phenotype, including for participants with multimorbidity and/or cognitive impairment.

**Results:** We have chosen the Bangor Goal-setting Interview and adapted it for use within the PRIME-UK RCT. This includes 4 steps: participants 1) identify an area to work on; 2) describe a specific goal; 3) rate current attainment, readiness to change and goal importance; and 4) attainment is followed up 3-monthly. Change in ratings across three to five individualised goals on a standardised scale can be compared between trial arms.

**Conclusion:** We demonstrate how a goal-orientated outcome can be operationalized within a complex intervention trial for parkinsonism. Parkinsonism is an exemplar multisystem, heterogeneous condition, predominantly affecting older people. There is scope to use goal-orientated outcome measures more widely in trials involving patients living with frailty, multimorbidity and/or clinical complexity.

**Keywords:** Clinical trials; Complex interventions; Frailty; Goal attainment; Multimorbidity; Outcome measures; Parkinson's disease.

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#### Conflict of interest statement

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. 2025 Feb:191:108211.

doi: 10.1016/j.ypped.2024.108211. Epub 2024 Dec 19.

[Association between physical activity-related metabolic signature and cardiometabolic diseases and multimorbidity: A cohort study from UK biobank](#)

[Jiacheng Wang<sup>1</sup>](#), [Yi Zheng<sup>2</sup>](#), [Yanfeng Jiang<sup>3</sup>](#), [Chen Suo<sup>4</sup>](#), [Tiejun Zhang<sup>5</sup>](#), [Xingdong Chen<sup>6</sup>](#), [Kelin Xu<sup>7</sup>](#)

Affiliations Expand

- PMID: 39708996
- DOI: [10.1016/j.ypmed.2024.108211](#)

Abstract

**Objective:** Physical activity has protective effects on cardiometabolic diseases (CMDs), but the role of metabolism related to physical activity in this process is unclear.

**Methods:** In the prospective cohort study from UK Biobank between 2006 and 2022, participants free of CMDs at baseline were included (n = 73,990). We identified physical activity-related metabolites and constructed metabolic signature using linear regression and elastic net regression. Association between physical activity, metabolic signature, and CMDs (type 2 diabetes [T2D], coronary heart disease [CHD], and stroke) were explored using Cox and mediation analyses. Interactions between the metabolic signature and genetic susceptibility (categorized into "low" and "high" based on the median of polygenic risk scores) were assessed by additive hazard models and relative excess risk due to interaction (RERI). Multi-state models evaluated the association between metabolic signature and disease progression.

**Results:** We found 58 metabolites were related to physical activity, of which 17 were used to construct metabolic signature. The metabolic signature was associated with reduced risk of T2D (HR = 0.13[0.10-0.16]), CHD (HR = 0.40[0.34-0.47]), and stroke (HR = 0.67[0.53-0.86]), and mediated 40.56 % of the association between physical activity and T2D. The metabolic signature exhibited additive interactions with genetic risk for T2D (RERI = 1.57[1.09-2.05]) and CHD (RERI = 0.27[0.05-0.49]). Finally, the metabolic signature was associated with a reduced risk of transition from CMD to CMM (HR = 0.58[0.42-0.81]).

**Conclusion:** Physical activity-related metabolic signature is linked to reduced risks of CMDs and CMM. We once again emphasize the importance of physical activity for CMDs prevention from a metabolic perspective, especially for individuals at high genetic risk.

**Keywords:** Cardiometabolic disease; Genetic susceptibility; Interaction; Metabolome; Multimorbidity.

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Conflict of interest statement

**Declaration of competing interest** The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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. 2025 Feb;42(2):e15403.

doi: 10.1111/dme.15403. Epub 2024 Jul 8.

[Enhancing clinical service design for multimorbidity management: A comprehensive approach to joined-up care for diabetes, chronic kidney disease, and heart failure](#)

[Saif Al-Chalabi](#)<sup>1,2</sup>, [Smeeta Sinha](#)<sup>1,3</sup>, [Philip A Kalra](#)<sup>1,3</sup>

**Affiliations** [Expand](#)

- PMID: 38978167
- PMCID: [PMC11733658](#)
- DOI: [10.1111/dme.15403](#)

**Abstract**

**Background and aims:** Multimorbidity is becoming the norm rather than the exception, especially among the ageing population and people with lower socio-economic status. In addition to the rising healthcare cost, multimorbidity poses considerable difficulty in the delivery of adequate holistic care for affected patients.

**Methods:** This review presents a discussion of the current barriers to delivering holistic care to people with multimorbidity and proposes a model of clinical care for people living with cardiovascular-kidney-metabolic (CKM) syndrome as an exemplar of a multimorbidity cluster.

**Results:** Single organ/disease services may not be able to provide optimum care to people with multimorbidity due to the potential complex interactions between multiple disease symptoms and management. In addition, people with multimorbidity may be required to attend multiple appointments in different healthcare centres. This may negatively impact access to services due to time and financial burden. Other barriers include co-ordinating communication between healthcare professionals and reduced continuity of care. Optimising CKM health requires patient-centred care led by an interdisciplinary care team who ideally should possess CKM competencies utilising a shared care protocol to coordinate evidence-based care and use of telehealth to empower patients. Stakeholders and policymakers need to adapt new policy models to establish and enhance CKM care models by allocating funds and implementing frameworks for educational reforms.

**Conclusions:** A CKM service has the potential to increase the uptake of cardiac and renal protective medications as well as optimising metabolic care, increase capacity in both primary and secondary care, improve quality of life and clinical outcomes, reduce patient inconvenience, and importantly allow rapid translation of advances in cardiorenal metabolic diseases into clinical practice.

**Keywords:** cardiovascular-kidney-metabolic syndrome; chronic kidney disease; diabetes mellitus; heart failure; integrated care; multimorbidity; telehealth.

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#### **Conflict of interest statement**

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BMJ Open

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. 2025 Jan 28;15(1):e083278.

doi: 10.1136/bmjopen-2023-083278.

[Analytical approaches to evaluate risk factors of multimorbidity: a systematic scoping review protocol](#)

[Wenbo Song](#)<sup>1,2</sup>, [Nick Birk](#)<sup>3</sup>, [Mika Matsuzaki](#)<sup>4</sup>, [Judith Lieber](#)<sup>5</sup>, [Hiroto Yamanashi](#)<sup>2</sup>, [Elliott Rogers](#)<sup>6</sup>, [Chanchanok Aramrat](#)<sup>5,7</sup>, [Nutchar Wiwatkunupakarn](#)<sup>5,7</sup>, [Chaisiri Angkurawaranon](#)<sup>7</sup>, [Alex Lewin](#)<sup>5</sup>, [Sanjay Kinra](#)<sup>5</sup>, [Poppy Alice Carson Mallinson](#)<sup>5</sup>

Affiliations Expand

- PMID: 39880433
- PMCID: [PMC11781107](#)
- DOI: [10.1136/bmjopen-2023-083278](#)

Abstract

**Introduction:** Understanding causal risk factors that contribute to the development of multimorbidity is essential for designing and targeting effective preventive strategies. Despite a large body of research in this field, there has been little critical discussion about the appropriateness of the various analytical approaches used. This proposed scoping review aims to summarise and appraise the analytical approaches used in the published literature that evaluated risk factors of

multimorbidity and to provide guidance for researchers conducting analyses in this field.

**Methods and analysis:** We will systematically search three electronic databases- Embase, Global Health and MEDLINE, as well as the reference lists of identified relevant review articles, from inception to September 2024. We will screen titles and abstracts using the artificial intelligence-aided software ASReview, followed by screening for eligible articles in full text and extracting data. We will then categorise the analytical approaches used across studies, provide a comprehensive overview of the methodology and discuss the potential strengths and limitations of each analytical approach.

**Ethics and dissemination:** We will undertake a secondary analysis of published literature; therefore, ethical approval is not required. The results will be disseminated through an open-access, peer-reviewed publication. This systematic scoping review will serve as a guide for researchers in selecting analytical approaches for aetiological multimorbidity research, thereby improving the quality and comparability of research in this field.

**Keywords:** Chronic Disease; GENERAL MEDICINE (see Internal Medicine); GERIATRIC MEDICINE; Multimorbidity; Risk Factors.

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**Conflict of interest statement**

**Competing interests:** None declared.

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. 2025 Jan 28;171(1):33-39.

doi: 10.1136/military-2023-002535.

**Multicomponent telerehabilitation programme for older veterans with multimorbidity: a programme evaluation**

**Michelle R Rauzi<sup>1</sup>, L M Abbate<sup>2,3</sup>, H D Lum<sup>4</sup>, P F Cook<sup>5</sup>, J E Stevens-Lapsley<sup>6,2</sup>**

**Affiliations Expand**

- PMID: 37709508
- PMCID: PMC10937321 (available on 2026-01-28)
- DOI: [10.1136/military-2023-002535](https://doi.org/10.1136/military-2023-002535)

**Abstract**

**Introduction:** Older veterans with multimorbidity experience physical, mental and social factors which may negatively impact health and healthcare access. Physical function, behaviour change skills and loneliness may not be addressed during traditional physical rehabilitation. Thus, a multicomponent telerehabilitation programme could address these unmet needs. This programme evaluation assessed the safety, feasibility and change in patient outcomes for a multicomponent telerehabilitation programme.

**Methods:** Individuals were eligible if they were a veteran/spouse, age  $\geq 50$  years and had  $\geq 3$  comorbidities. The telerehabilitation programme included four core components: (1) High-intensity rehabilitation, (2) Coaching interventions, (3) Social support and (4) Technology. Physical therapists delivered the 12-week programme and collected patient outcomes at baseline, 4 weeks, 8 weeks and 12 weeks. Programme evaluation measures included safety events (occurrence and type), feasibility (adherence) and patient outcomes (physical function). Safety and feasibility outcomes were analysed using descriptive statistics. The mean pre-post programme difference and 95% CI for patient outcomes were generated using paired *t*-tests.

**Results:** Twenty-one participants enrolled in the telerehabilitation programme; most were male (81%), white (72%) and non-Hispanic (76%), with an average of 5.7 (3.0) comorbidities. Prevalence of in-session safety events was 3.2% (0.03 events/session). Fifteen (71.4%) participants adhered to the programme (attended  $\geq 80\%$  of sessions). Mean (95% CI) improvements for physical function are as follows: 4.7 (2.4 to 7.0) repetitions for 30 s sit to stand, 6.0 (4.0 to 9.0) and 5.0 (2.0 to 9.0) repetitions for right arm curl and left arm curl, respectively, and 31.8 (15.9 to 47.7) repetitions for the 2 min step test.

**Conclusion:** The telerehabilitation programme was safe, feasible and demonstrated preprogramme to postprogramme improvements in physical function measures

while addressing unmet needs in a vulnerable population. These results support a randomised clinical trial while informing programme and process adaptations.

**Keywords:** GERIATRIC MEDICINE; Health & safety; REHABILITATION MEDICINE; Telemedicine.

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**Conflict of interest statement**

**Competing interests:** None declared.

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**World J Clin Cases**

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. 2025 Jan 26;13(3):98284.

doi: 10.12998/wjcc.v13.i3.98284.

[Challenges and improvement strategies in the hospitalization of chronic multimorbid patients](#)

[Andres Fontalba-Navas](#)<sup>1,2</sup>, [Francisco Pozo Muñoz](#)<sup>3</sup>, [Rogelio Garcia Cisneros](#)<sup>3</sup>, [Maria Jose Garcia Larrosa](#)<sup>3</sup>, [Maria Del Mar Callejon Gil](#)<sup>3</sup>, [Ignacio Garcia Delgado](#)<sup>3</sup>, [Maria Belen Jimenez Martinez](#)<sup>3</sup>

## Affiliations Expand

- PMID: 39866646
- PMCID: [PMC11577520](#)
- DOI: [10.12998/wjcc.v13.i3.98284](#)

## Abstract

**Background:** Addressing the growing challenge of hospitalizing chronic multimorbid patients, this study examines the strain these conditions impose on healthcare systems at a local level, focusing on a pilot program. Chronic diseases and complex patients require comprehensive management strategies to reduce healthcare burdens and improve patient outcomes. If proven effective, this pilot model has the potential to be replicated in other healthcare settings to enhance the management of chronic multimorbid patients.

**Aim:** To evaluate the effectiveness of the high complexity unit (HCU) in managing chronic multimorbid patients through a multidisciplinary care model and to compare it with standard hospital care.

**Methods:** The study employed a descriptive longitudinal approach, analyzing data from the Basic Minimum Data Set (BMDS) to compare hospitalization variables among the HCU, the Internal Medicine Service, and other services at Antequera Hospital throughout 2022. The HCU, designed for patients with complex chronic conditions, integrates a patient-centered model emphasizing multidisciplinary care and continuity post-discharge.

**Results:** The study employed a descriptive longitudinal approach, analyzing data from the BMDS to compare hospitalization variables among the HCU, the Internal Medicine Service, and other services at Antequera Hospital throughout 2022. The HCU, designed for patients with complex chronic conditions, integrates a patient-centered model emphasizing multidisciplinary care and continuity post-discharge.

**Conclusion:** This study demonstrates the effectiveness of the HCU in managing patients with complex chronic diseases through a multidisciplinary approach. The coordinated care provided by the HCU results in improved patient outcomes, reduced unnecessary hospitalizations, and better management of patient complexity. The superiority of the HCU compared to standard care is evident in key outcomes such as fewer readmissions and higher patient satisfaction, reinforcing its value as a model of care to be replicated.

**Keywords:** Chronic multimorbidity; Healthcare management; High complexity unit; Integrated care; Patient-centered care.

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Conflict of interest statement

Conflict-of-interest statement: All authors declare no conflict of interest in publishing the manuscript.

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## "asthma"[MeSH Terms] OR asthma[Text Word]

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. 2025 Feb;15(2):e70035.

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[T2-low severe asthma clinical spectrum and impact: The Greek PHOLLOW cross-sectional study](#)

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Affiliations [Expand](#)

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- DOI: [10.1002/clin2.70035](#)

## Abstract

**Background:** Data on type 2 (T2)-low severe asthma (SA) frequency is scarce, resulting in an undefined unmet therapeutic need in this patient population. Our objective was to assess the frequency and characterize the profile and burden of T2-low SA in Greece.

**Methods:** PHOLLOW was a cross-sectional study of adult SA patients. Based on a novel proposed classification system, patients were classified as T2-low if blood eosinophil count (BEC; cells/ $\mu$ L) was  $<150$ , fractional exhaled nitric oxide (FeNO)  $<25$  ppb and any allergy status or BEC  $<150$ /FeNO  $<50$  ppb/no allergy or BEC  $<300$ /FeNO  $<25$  ppb/no allergy. For patients receiving biologics and/or oral corticosteroids, only those with BEC  $<150$ /FeNO  $<25$  ppb/no allergy/no response to therapy were classified as T2-low. Secondary outcome measures were: Asthma Control Test (ACT<sup>™</sup>), Mini-Asthma Quality of Life Questionnaire (Mini-AQLQ), hospital anxiety and depression scale (HADS), and Work Productivity and Activity Impairment:Respiratory Symptoms (WPAI:RS) questionnaire.

**Results:** From 22-Mar-2022 to 15-Mar-2023, 602 eligible SA patients were enrolled. The frequency of T2-low asthma was 20.1%. Of those, 71.1% had experienced  $\geq 1$  clinically significant exacerbations in the past year, 62.8% had ACT score  $<20$  (uncontrolled asthma), and 22.3% were biologic-treated. Mini-AQLQ score was  $<6$  (impairment) in 79.5% of patients, HADS-total score was  $\geq 15$  (clinically significant emotional distress) in 43.8%, while median percent activity impairment and work productivity loss were 30.0 for both domains. Clinical and patient-reported outcomes were worse among patients with ACT-defined uncontrolled asthma.

**Conclusions:** One-fifth of SA patients present with a T2-low endotype. These patients frequently have uncontrolled disease and experience impairments in their quality of life, emotions and work ability.

**Keywords:** clinically significant exacerbations; quality of life; real-world; symptom control; treatment patterns.

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### [Roads to remission: evolving treatment concepts in type 2 inflammatory diseases](#)

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Affiliations Expand

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- PMCID: [PMC11764424](#)
- DOI: [10.1016/j.eclinm.2024.103050](#)

Abstract

Non-communicable diseases (NCDs) characterised by type 2 inflammation, including asthma, allergic rhinitis, chronic rhinosinusitis with nasal polyps, atopic dermatitis, food allergies and eosinophilic esophagitis, are increasing in prevalence worldwide. Currently, there is a major paradigm shift in the management of these diseases, towards the concept of disease modification and the treatment goal remission, regardless of severity and age. Remission as a treatment goal in chronic inflammatory NCDs was first introduced in rheumatoid arthritis, and then adopted in other non-type 2 inflammatory diseases. Among diseases with type 2 Inflammation, this concept is novel and currently most advanced in asthma. This new paradigm has been developed based on a better understanding of the pathophysiology of type 2 inflammation and the advent of highly effective drugs selectively interfering with type 2 pathways. Here, we review the evolution of the new remission concepts in type 2 inflammatory diseases and discuss associated challenges and future research needs.

Funding: None.

Keywords: Disease modification; Remission; Type 2 inflammation.

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Conflict of interest statement

ML reports grants for research or clinical trials, paid to his institution, from AstraZeneca, Deutsche Forschungsgemeinschaft (DFG), and GSK; and consulting fees, travel expenses, or honoraria for lectures from ALK, Allergopharma, Apontis, AstraZeneca, Berlin-Chemie, Boehringer Ingelheim, Chiesi, GSK, HAL Allergy, Leti, Novartis, MSD, Sanofi, Stallergenes, Teva. KB reports on grants for research or clinical trials, paid to the institution from Aimmune therapeutics, Nestle, DBV technologies, Novartis, Hipp GmbH and consulting fees, travel expenses, or honoraria for lectures from ALK-Abello Arzneimittel GmbH, Allergopharma, Aimmune therapeutics, Allergy therapeutics, Danone Deutschland GmbH, DBV Technologies, Engelhard Arzneimittel, Novartis Pharma AG, Sanofi, ThermoFisher Scientific, Mylan Germany GmbH, German society of clinical chemistry and laboratory medicine, Stallergenes GmbH, German society of allergology and clinical immunology, German society of pediatric allergology and environmental medicine, Austrian society of children and adolescent medicine, Medical association of German allergologists, European academy of allergology and clinical immunology. LAB reports consulting fees from Allakos, Amgen, Arcutis, Arena Pharmaceuticals, AstraZeneca, Atria Therapeutics, Evelo Biosciences, Escient Pharma, Galderma, Incyte, Invea Therapeutics, Janssen, LEO Pharma, Merck, Nektar Therapeutics, Novartis, Numab Therapeutics, Pfizer, Rapt Therapeutics, Regeneron Pharmaceuticals Inc., Ribon Therapeutics, Sanofi-Aventis/Genzyme, Sitryx Therapeutics, Stealth BioTherapeutics, Trevi Therapeutics, UCB Pharma, Union therapeutics, and Xencor and research grants from Abbvie, AstraZeneca, Pfizer, Regeneron Pharmaceuticals Inc., and Sanofi. JB reports personal fees from Cipla, Menarini, Mylan, Novartis, Purina, Sanofi-Aventis, Teva, Noucor, KYomed-Innov, Mask-air-SAS. GGB reports consulting fees, travel expenses, or honoraria for lectures from AstraZeneca, Boehringer-Ingelheim, Chiesi, GlaxoSmithKline, Merck Sharp & Dohme, Novartis, Sanofi Regeneron. WF reports consultation and/or speaker fees from Dianotic, GSK, Novartis, Sanofi-Aventis/Regeneron and AstraZeneca. EH reports grants for research or clinical trials, paid to his institution, from the German Ministry of Education and Research (BMBF), InfectoPharm, Wolff, AstraZeneca; and consulting fees, travel expenses, or honoraria for lectures from ALK, Allergopharma, AstraZeneca, Berlin-Chemie, Boehringer Ingelheim, GSK, HAL Allergy, Leti, Novartis, Sanofi, Stallergenes. SL reports research grants from DFG (German Research Foundation), Einstein Foundation, DBV, and consultation and/or speaker fees from Allergopharma, ALK, DBV, GSK, LETI, Leo-Pharma, Lilly, Viatrix, Sanofi-Aventis. OP reports grants and/or personal fees and/or travel support from ALK-Abelló, Allergopharma, Stallergenes Greer, HAL Allergy Holding B.V./HAL Allergie GmbH, Bencard Allergie GmbH/Allergy Therapeutics, Laboratorios LETI/LETI Pharma, GlaxoSmithKline, ROXALL Medizin, Novartis, Sanofi-Aventis and Sanofi-Genzyme, Med Update Europe GmbH, streamedup! GmbH, Pohl-Boskamp, Immunotek S.L., John Wiley and Sons/AS, Paul-Martini-Stiftung (PMS), Regeneron Pharmaceuticals Inc., RG Aerztefortbildung, Institut für Disease Management, Springer GmbH, AstraZeneca, IQVIA Commercial, Ingress Health, Wort&Bild Verlag, Verlag ME, Procter&Gamble, ALTAMIRA, Meinhardt Congress GmbH, Deutsche Forschungsgemeinschaft (DFG), Thieme Verlag, Deutsche AllergieLiga e.V., AeDA, Alfried-Krupp Krankenhaus, Red Maple Trials Inc., Königlich Dänisches Generalkonsulat, Medizinische Hochschule Hannover, ECM Expro&Conference Management, Technical University Dresden, Lilly, Japanese Society of Allergy, Forum für Medizinische Fortbildung, Dustri-Verlag, Pneumolive, ASIT Biotech, LOFARMA, Almirall, Paul-Ehrlich-Institut. HAS reports grant funding to his institution from NIH/NIAID and personal consulting fees from DBV Technologies, N-

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. 2024 Dec 20;4(1):100390.

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[ChatGPT as a source of information on asthma](#)

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Affiliations Expand

- PMID: 39867746
- PMCID: [PMC11759546](#)
- DOI: [10.1016/j.jacig.2024.100390](#)

*No abstract available*

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Disclosure of potential conflict of interest: The authors declare that they have no relevant conflicts of interest.

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. 2024 Nov 26;4(1):100374.

doi: 10.1016/j.jacig.2024.100374. eCollection 2025 Feb.

[Biologic therapies targeting type 2 cytokines are effective at improving asthma symptoms and control-a systematic review and meta-analysis](#)

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#### Affiliations Expand

- PMID: 39844912
- PMCID: [PMC11751513](#)
- DOI: [10.1016/j.jaciq.2024.100374](#)

#### Abstract

**Background:** Allergic asthma is a highly prevalent chronic inflammatory disease driven by aeroallergen exposure. In severe asthma, the current standard of care does not fully control disease symptoms, indicating an unmet clinical need. Biologic therapies targeting cytokines IL-4, IL-5, and IL-13 have been shown to provide benefits to asthmatic patients over currently existing asthma treatments.

**Objective:** We sought to review the effects of recently developed biologic therapies for asthma treatment.

**Methods:** In this meta-analysis, the impact of IL-5 and IL-4/IL-13 biologic inhibitors was critically appraised considering overall lung function, symptom control, and oral corticosteroid use in asthmatic patients. Trials were identified using PubMed, Web of Science, Scopus, and clinicaltrials.gov. Clinical trials assessing severe asthmatic participants older than 12 years were included.

**Results:** The meta-analysis included 6600 participants from 14 trials published in 2013 to 2020. For IL-5 inhibitors, improvements in FEV<sub>1</sub> (mean difference [MD], 0.11; 95% CI, 0.11 to 0.12), Asthma Control Questionnaire scores (MD, -0.4; 95% CI, -0.41 to -0.38), annual exacerbation rates (MD, -0.46; 95% CI, -0.48 to -0.45), and oral corticosteroid use (MD, -50; 95% CI, -52.58 to -47.42) favored biologic treatment. Significant improvements in FEV<sub>1</sub> (MD, 0.11; 95% CI, 0.10 to 0.11), Asthma Control Questionnaire scores (MD, -0.20; 95% CI, -0.22 to -0.18), and annual exacerbation rates (MD, -0.15; 95% CI, -0.16 to -0.14) were also seen with anti-IL-4/IL-13 biologic therapies. However, anti-IL-4/IL-13 inhibitors were associated with more adverse events than placebo (MD, 1.13; 95% CI, 0.97 to 1.3).

**Conclusions:** Biologic inhibitors targeting T<sub>H</sub>2 cytokines are beneficial for improving overall asthma control.

**Keywords:** Asthma; biologics; cytokine; inflammation; pharmacotherapy.

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#### Conflict of interest statement

**Disclosure of potential conflict of interest:** The authors declare that they have no relevant conflicts of interest.

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. 2025 Feb;174(2):203-212.

doi: 10.1111/imm.13882. Epub 2024 Dec 12.

[The Role of Wnt5a in Inflammatory Diseases](#)

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Affiliations Expand

- PMID: 39668514
- DOI: [10.1111/imm.13882](#)

Abstract

Wnt5a plays an important role in cell development and maturation and is closely associated with various diseases, such as malignant tumours, metabolic disorders, fibrosis, growth and development. Recent studies have shown that Wnt5a expression and signal transduction are strongly involved in the inflammatory response. This study comprehensively reviewed the latest research progress on the association between Wnt5a and several inflammatory diseases, such as sepsis, asthma, chronic obstructive pulmonary disease, tuberculosis, rheumatoid arthritis, atherosclerosis and psoriasis vulgaris. We elucidated the mechanism by which the Wnt5a protein is involved in the pathogenesis of these diseases, providing a basis for the prevention and treatment of inflammatory diseases.

Keywords: JAKs/STATs; Wnt5a; immune homeostasis; inflammation; inhibitory/activating receptors.

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. 2024 Nov 1;4(1):100364.

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[Refractory phenotype of \*Aspergillus\*-sensitized asthma with bronchiectasis and allergic bronchopulmonary aspergillosis](#)

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- DOI: [10.1016/j.jaciq.2024.100364](https://doi.org/10.1016/j.jaciq.2024.100364)

## Abstract

**Background:** Sensitization to *Aspergillus*, mucus plugs, and bacterial colonization may coexist and relate to a refractory phenotype during follow-up in asthma with bronchiectasis and allergic bronchopulmonary aspergillosis (ABPA).

**Objective:** This study aimed to clarify the features of *Aspergillus*-sensitized refractory asthma with bronchiectasis and determine the refractory phenotype in this population and ABPA.

**Methods:** This study included cases of the oldest available *Aspergillus fumigatus*-specific IgE data and chest computed tomography images from a nationwide survey of refractory asthma with bronchiectasis. The characteristics of the *A fumigatus*-IgE positive (*Af* sIgE<sup>+</sup>) group were investigated and compared with its nonsensitized counterpart (*Af* sIgE<sup>-</sup>) and ABPA group. Cluster analysis was conducted to determine the refractory phenotype.

**Results:** The *Af* sIgE<sup>+</sup> group (n = 35) demonstrated type 2 inflammation levels intermediate between the ABPA (n = 42) and *Af* sIgE<sup>-</sup> (n = 38) groups while exhibiting higher blood monocyte counts than the *Af* sIgE<sup>-</sup> group. Cluster analysis conducted in patients with ABPA and *Af* sIgE<sup>+</sup> newly determined 2 clusters: one was characterized by a younger age of asthma onset with fungal detection in sputum, and the other was characterized by mucus plugs and inflammation with eosinophils and monocytes, which was significantly related to mucus plugs, airflow limitation, and trend to show exacerbation. In the latter cluster, mucus plugs persisted, and 30% yielded *Pseudomonas aeruginosa* in the sputum <5 years later.

**Conclusion:** The refractory phenotype with persistent mucus plugs was identified in *Aspergillus*-sensitized refractory asthma with bronchiectasis and ABPA. Mucus plug prevention is warranted.

**Keywords:** ABPA; *Aspergillus* sensitization; bronchiectasis; monocyte; mucus plug; refractory asthma.

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## Conflict of interest statement

Supported by the Scientific Assembly of Allergy, Immunology & Inflammation, 10.13039/501100009098 Japanese Respiratory Society, 10.13039/100030831 Novartis Japan, and the 10.13039/100009619 Japan Agency for Medical Research and Development (research grant 24ek0410097 for Allergic Disease and Immunology). Disclosure of potential conflict of interest: K. Asano received lecturer fees from Sanofi, AstraZeneca, and Boehringer Ingelheim outside this work; and received a research grant on Allergic Disease and Immunology from the Japan Agency for Medical Research and Development. K. Fukunaga received lecturer fees from Sanofi, AstraZeneca, GlaxoSmithKline, Kyorin Pharmaceutical, Boehringer Ingelheim, and Novartis Pharma outside this work; and received grants from Boehringer Ingelheim and Chugai Pharmaceutical outside this work. N. Harada received lecturer fees from Sanofi, AstraZeneca, GlaxoSmithKline, Kyorin

Pharmaceutical, and Novartis Pharma outside this work; and royalties from Sanofi, AstraZeneca, Daikin Investment, and TOSOH. T. Hirai received lecturer fees from AstraZeneca, Kyorin Pharmaceutical, and Boehringer Ingelheim outside this work. N. Hattori received lecturer fees from Sanofi, AstraZeneca, GlaxoSmithKline, Kyorin Pharmaceutical, Ono Pharmaceutical, MSD, and Pfizer Japan outside this work. T. Kimura received lecture fees from Sanofi, AstraZeneca, GlaxoSmithKline, Eli Lilly Japan, Chugai Pharmaceutical, Novartis Pharma, Bristol Myers Squibb, Meiji Seika Pharma, DAIICHI SANKYO, and MSD outside this work. H. Matsumoto received lecturer fees from Sanofi, AstraZeneca, GlaxoSmithKline, Kyorin Pharmaceutical, and Boehringer Ingelheim; received grants from Kyorin Pharmaceutical, Boehringer Ingelheim, and Teijin Pharma outside this work; and received support from the Japanese Respiratory Society and a research grant from Novartis Japan. O. Matsuno received lecturer fees from Sanofi, AstraZeneca, and GlaxoSmithKline. T. Sakagami received lecturer fees from AstraZeneca, GlaxoSmithKline, Novartis Pharma, and Boehringer Ingelheim outside this work. H. Sugiura received lecturer fees from Sanofi, AstraZeneca, GlaxoSmithKline, Novartis Pharma, and Boehringer Ingelheim outside this work. H. Sunadome reports grants from Philips Japan, ResMed, Fukuda Denshi, and Fukuda Lifetec Keiji outside this work. N. Tanabe received research grants from Daiichi Sankyo and FUJIFILM outside this work. K. Tomii received lecturer fees from Sanofi, AstraZeneca, GlaxoSmithKline, and Novartis Pharma outside this work. A. Yokoyama received lecturer fees from Sanofi, AstraZeneca, GlaxoSmithKline, and Boehringer Ingelheim outside this work. The rest of the authors declare that they have no relevant conflicts of interest.

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## [On-treatment clinical remission of severe asthma with real-world longer-term biologic use](#)

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### Affiliations Expand

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- PMCID: [PMC11629328](#)
- DOI: [10.1016/j.jaciq.2024.100365](#)

### Abstract

**Background:** There are limited real-world data describing the proportion of patients with severe asthma (SA) who achieve on-treatment clinical remission with long-term biologic treatment.

**Objective:** Our aim was to examine the proportion and characteristics of adults with SA who achieved clinical remission with biologic therapy.

**Methods:** CHRONICLE is an observational study of US subspecialist-treated adults with SA. Sites reported exacerbations and biologic use from 12 months before enrollment forward. Monthly Asthma Control Test scores and 6-monthly specialist assessments of asthma control were collected. Patients who enrolled from February 2018 to February 2023, began taking a biologic during the study observation period, and continued use of that biologic for at least 12 months were evaluated. Incident on-treatment clinical remission was defined in a 12-month interval as the absence of exacerbations and systemic corticosteroid use, a 50% or greater improvement in Asthma Control Test scores of least 20 points in the latest 6 months, and specialist report of asthma control.

**Results:** Among the evaluable patients (n = 611), the median duration of biologic use was 39.6 months. In at least one 12-month interval during the study, 79.9% of patients had no exacerbations or systemic corticosteroid use and 46.0% met the definition of clinical remission at any point. The point prevalence of clinical remission increased from 22.3% at 12 to 13 months of biologic use to 34.3% at 47 to 48 months of biologic use.

**Conclusions:** In a real-world cohort of patients with SA with longer-term biologic treatment, almost one-half achieved on-treatment clinical remission. With at least 1 year of biologic therapy, clinical remission is a feasible treatment goal in SA.

**Keywords:** Severe asthma; biologic; clinical remission.

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**Conflict of interest statement**

This work and the CHRONICLE study were supported by 10.13039/100004325AstraZeneca. Disclosure of potential conflict of interest: B. E. Chipps reports serving on advisory boards and as a consultant and speaker for AstraZeneca, Boehringer Ingelheim, Genentech, GSK, Novartis, Regeneron, and Sanofi. N. Lugogo reports receiving consulting fees for advisory board participation from Amgen, AstraZeneca, Genentech, GSK, Novartis, Regeneron, Sanofi, and Teva; honoraria for non-speakers bureau presentations from AstraZeneca, GSK, and Niox; and travel support from AstraZeneca; in addition, her institution has received research support from Amgen, AstraZeneca, Avillion, Gossamer Bio, Genentech, GSK, Regeneron, Sanofi, and Teva. W. Carr reports serving as a speaker for AstraZeneca, Boehringer Ingelheim, Regeneron, Sanofi, and Teva and as a consultant for Aerocrine, Alcon Laboratories, AstraZeneca, Bausch Health, Baxalta, Boehringer Ingelheim, Circassia, CSL Behring, Genentech, Greer Laboratories, Grifols, GSK, Horizon Pharma, Kaleo, Meda, Novartis, Optinose, Pfizer, Regeneron, Sanofi, Takeda, Teva, and Viartis. W. Zhou is an employee of ClinChoice, Inc. A. Patel is a former employee and shareholder of AstraZeneca. D. D. Carstens, F. Trudo, and C. S. Ambrose are employees and shareholders of AstraZeneca.

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- [2 figures](#)

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J Clin Epidemiol

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. 2025 Feb;178:111621.

doi: 10.1016/j.jclinepi.2024.111621. Epub 2024 Dec 4.

[Determinants of cost-effectiveness results of biological therapies for severe asthma: a systematic methodological assessment](#)

[Laura de la Torre-Pérez](#)<sup>1</sup>, [Marilina Santero](#)<sup>2</sup>, [Wendy Nieto-Gutierrez](#)<sup>3</sup>, [Christine Giesen](#)<sup>4</sup>, [Angela Nardin](#)<sup>5</sup>, [Claudia Cosma](#)<sup>6</sup>, [Pedro Silva Pires](#)<sup>7</sup>, [Andrea Guida](#)<sup>6</sup>, [Marcello Simonini](#)<sup>8</sup>, [Camila Quirland Lazo](#)<sup>9</sup>, [Feng Xie](#)<sup>10</sup>, [Pablo Alonso-Coello](#)<sup>11</sup>

## Affiliations Expand

- PMID: 39638078
- DOI: [10.1016/j.jclinepi.2024.111621](https://doi.org/10.1016/j.jclinepi.2024.111621)

## Abstract

**Objectives:** To assess the associations between cost-effectiveness analysis' (CEA) methodological characteristics and incremental cost-effectiveness ratio outcomes and conclusions, in biological treatments for asthma.

**Study design and setting:** We included CEAs comparing biological treatments to standard care, in adults with severe asthma. We performed a search in MEDLINE, EMBASE, and Web of Science (September 2022). We extracted and summarized CEA's characteristics and critically appraised the studies using the extended Consensus Health Economic Criteria. In those reporting benefits as quality-adjusted life years, we conducted bivariate and regression analyses.

**Results:** We identified 33 CEAs that showed overall good quality (above 66.6% of compliance) with variable results across extended Consensus Health Economic Criteria sections. We included 28 cost-utility analyses on biological treatments in asthma in our analysis. Only industry sponsorship showed significant differences in the bivariate analysis ( $P = .021$  for the difference in incremental cost-effectiveness ratio medians, and  $P = .027$  for the different percentage in reported cost-effectiveness). In the regression adopting a nonlifetime horizon and nonuse of a model ( $\beta = 4.25$  and  $\beta = 0.16$ ,  $P < .05$ ), significantly associated in the multivariate analysis. Only nonindustry sponsorship showed a significant association with the drug being reported as not cost-effective, both in the bivariate and multivariate analysis (odds ratio = 13.2 and odds ratio = 20.15  $P < .05$ ).

**Conclusion:** Our study identified significant limitations, including poor reporting practices and the impact of industry sponsorship on outcomes, with notable effects on cost-effectiveness conclusions. These findings highlight the need for policymakers and health-care decision-makers to meticulously consider methodological rigor and potential biases in economic evaluations.

**Keywords:** Asthma; Bias; Health economics; Health technology assessments; MESH terms; Sponsorship bias.

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## Conflict of interest statement

Declaration of competing interest L.T. reports financial support was provided by the Carlos III Health Institute. There are no competing interests for any other author.

## Supplementary info

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Curr Opin Otolaryngol Head Neck Surg

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. 2025 Feb 1;33(1):1-6.

doi: 10.1097/MOO.0000000000001022. Epub 2024 Nov 27.

[Chronic rhinosinusitis and asthma: epidemiology, pathophysiology, morbidity, treatment](#)

[Marlene M Speth](#)<sup>1</sup>, [David T Liu](#)<sup>2</sup>, [Gerold Besser](#)<sup>3</sup>, [Ahmad R Sedaghat](#)<sup>4</sup>

Affiliations Expand

- PMID: 39607835
- DOI: [10.1097/MOO.0000000000001022](#)

Abstract

**Purpose of review:** Especially with the advent of biologics which have originally been prescribed primarily for pulmonary disease, the interconnections between asthma and chronic rhinosinusitis are becoming even more apparent. Biologics can now also be prescribed for chronic rhinosinusitis in some countries. But what is the epidemiology, pathophysiology and treatment of both diseases?

**Recent findings:** This review covers the epidemiology, pathophysiology, morbidity and treatment of both diseases. Specifically, this review highlights the interdependencies of both diseases and potential future treatment options.

**Summary:** This review aims to alert physicians to go beyond treating only one of the diseases, but rather to get a broader picture of the diseases and treatment options.

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Curr Opin Allergy Clin Immunol

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. 2025 Feb 1;25(1):34-40.

doi: 10.1097/ACI.0000000000001045. Epub 2024 Nov 20.

[The role of type 2 diabetes in the severity of adult asthma](#)

[Alisa Pham](#)<sup>1</sup>, [Rose Corcoran](#)<sup>1</sup>, [Dinah Foer](#)<sup>1,2</sup>

Affiliations Expand

- PMID: 39607312
- PMCID: PMC11695166 (available on 2026-02-01)
- DOI: [10.1097/ACI.0000000000001045](https://doi.org/10.1097/ACI.0000000000001045)

Abstract

**Purpose of review:** This review summarizes recent basic, translational, and clinical research on type 2 diabetes (T2D) and its relationship with asthma severity in the context of T2D mechanisms and asthma outcomes.

**Recent findings:** Several clinical asthma outcomes, such as lung function and exacerbations, demonstrate a strong association between T2D and asthma and support that T2D contributes to worse asthma outcomes. Multiple mechanisms underlying those observed associations, and their representative biomarkers, have

been proposed. However, prospective, controlled human studies in the context of both T2D and asthma are limited.

**Summary:** T2D is associated with worse asthma outcomes and more severe asthma. Yet patients with more severe or uncontrolled asthma are also at a higher risk for systemic steroid exposure, which worsens glycemic control and metabolic dysregulation. Preclinical and translational studies point to metabolic dysregulation as a driver of airway inflammation. Addressing these metabolic pathways through T2D treatment may, in turn, directly or indirectly improve clinical asthma outcomes. While additional research is needed to identify biomarkers of risk and treatment response in metabolic asthma, this review highlights the importance of considering T2D as a clinically relevant asthma comorbidity.

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Conflict of interest statement

Conflicts of Interest: None.

- [65 references](#)

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Am J Respir Crit Care Med

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. 2025 Feb;211(2):194-204.

doi: 10.1164/rccm.202402-0403OC.

[Type 1 Immune Responses Related to Viral Infection Influence Corticosteroid Response in Asthma](#)

[John V Fahy](#)<sup>1</sup>, [Nathan D Jackson](#)<sup>2</sup>, [Satria P Sajuthi](#)<sup>2</sup>, [Elmar Pruesse](#)<sup>2</sup>, [Camille M Moore](#)<sup>2</sup>, [Jamie L Everman](#)<sup>2</sup>, [Cydney Rios](#)<sup>2</sup>, [Monica Tang](#)<sup>1</sup>, [Marc Gauthier](#)<sup>3</sup>, [Sally E Wenzel](#)<sup>3,4</sup>, [Eugene R Bleecker](#)<sup>5</sup>, [Mario Castro](#)<sup>6</sup>, [Suzy A Comhair](#)<sup>7</sup>, [Serpil C](#)

[Erzurum](#)<sup>7</sup>, [Annette T Hastie](#)<sup>8</sup>, [Wendy Moore](#)<sup>8</sup>, [Elliot Israel](#)<sup>9</sup>, [Bruce D Levy](#)<sup>9</sup>, [Loren Denlinger](#)<sup>10</sup>, [Nizar N Jarjour](#)<sup>10</sup>, [Mats W Johansson](#)<sup>10</sup>, [David T Mauger](#)<sup>11</sup>, [Brenda R Phillips](#)<sup>11</sup>, [Kaharu Sumino](#)<sup>12</sup>, [Prescott G Woodruff](#)<sup>1</sup>, [Michael C Peters](#)<sup>1</sup>, [Max A Seibold](#)<sup>2 13 14</sup>

## Affiliations Expand

- PMID: 39601762
- DOI: [10.1164/rccm.202402-0403OC](https://doi.org/10.1164/rccm.202402-0403OC)

## Abstract

**Rationale:** Corticosteroid-responsive type 2 (T2) inflammation underlies the T2-high asthma endotype. However, we hypothesized that type 1 (T1) inflammation, possibly related to viral infection, may also influence corticosteroid response. **Objectives:** To determine the frequency and within-patient variability of T1-high, T2-high, and T1/T2-high asthma endotypes and whether virally influenced T1-high disease influences corticosteroid response in asthma. **Methods:** Patients in SARP-3 (Severe Asthma Research Program-3) had sputum collected at baseline, after intramuscular (triamcinolone acetonide) corticosteroid treatment, and at 1- and 3-year follow-ups. Sputum cell RNA was used for whole-transcriptome gene network and viral metagenomic analyses. We then profiled patients as highly expressing T1 and/or T2 gene networks and established the influence of these endotypes on corticosteroid responsiveness and the likelihood of viral transcript detection in the airways. **Measurements and Main Results:** We found that 22% and 35% of patients with asthma highly expressed T1 and T2 network genes, respectively, and that 8.5% highly expressed both networks. Asthma severity outcomes were worse in T2-high compared with T1-high asthma and most severe in the T1-high/T2-high subgroup. Corticosteroid treatment strongly suppressed T2 but poorly suppressed T1 gene expression, and corticosteroid-associated improvements in FEV<sub>1</sub> occurred only in patients with T1-low/T2-high disease and not in patients with T1-high/T2-high disease. Viral metagenomic analyses uncovered that 24% of asthma sputum samples tested positive for a respiratory virus, and high viral carriage was associated with 14-fold increased risk of T1-high disease. **Conclusions:** Airway T1 immune responses are relatively common in asthma, are largely corticosteroid resistant, and are associated with subclinical viral infection.

**Keywords:** sputum; transcriptomics; type 1 asthma; type 2 asthma; viral metagenomics.

## Comment in

- [In Asthma, Change Is the Only Constant.](#)

Staples KJ. *Am J Respir Crit Care Med.* 2025 Feb;211(2):141-142. doi: 10.1164/rccm.202411-2290ED. PMID: 39700529 No abstract available.

## Supplementary info

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12

Am J Respir Crit Care Med

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. 2025 Feb;211(2):294-295.

doi: 10.1164/rccm.202410-2023LE.

[Location, Location, Location: Unpacking Eosinophils' Roles in Obesity-related Asthma](#)

[Zhenying Nie<sup>1</sup>](#)

Affiliations Expand

- PMID: 39585954
- DOI: [10.1164/rccm.202410-2023LE](#)

*No abstract available*

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13

Am J Respir Crit Care Med

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. 2025 Feb;211(2):174-193.

doi: 10.1164/rccm.202410-2080ST.

### [Assessment of Home-based Monitoring in Adults with Chronic Lung Disease: An Official American Thoracic Society Research Statement](#)

[Yet H Khor](#), [Vitalii Poberezhets](#), [Russell G Buhr](#), [James D Chalmers](#), [Hayoung Choi](#), [Vincent S Fan](#), [Maureen George](#), [Anne E Holland](#), [Hilary Pinnock](#), [Christopher J Ryerson](#), [Rachel Alder](#), [Kerri I Aronson](#), [Teresa Barnes](#), [Roberto Benzo](#), [Surinder S Biring](#), [Jeanette Boyd](#), [Barbara Crossley](#), [Ron Flewett](#), [Michael Freedman](#), [Toni Gibson](#), [Linzy Houchen-Wolloff](#), [Uma M Krishnaswamy](#), [John Linnell](#), [Fernando J Martinez](#), [Catharina C Moor](#), [Hillary Orr](#), [Andrea A Pappalardo](#), [Isabel Saraiva](#), [Karin Wadell](#), [Henrik Watz](#), [Marlies S Wijsenbeek](#), [Jerry A Krishnan](#)

- PMID: 39585746
- DOI: [10.1164/rccm.202410-2080ST](https://doi.org/10.1164/rccm.202410-2080ST)

#### Abstract

**Background:** There is increasing interest in the use of home-based monitoring in people with chronic lung diseases to improve access to care, support patient self-management, and facilitate the collection of information for clinical care and research. However, integration of home-based monitoring into clinical and research settings requires careful consideration of test performance and other attributes. There is no published guidance from professional respiratory societies to advance the science of home-based monitoring for chronic lung disease. **Methods:** An international multidisciplinary panel of 32 clinicians, researchers, patients, and caregivers developed a multidimensional framework for the evaluation of home-based monitoring in chronic lung disease developed through consensus using a modified Delphi survey. We also present an example of how the framework could be used to evaluate home-based monitoring using spirometry and pulse oximetry in adults with asthma, bronchiectasis/cystic fibrosis, chronic obstructive pulmonary disease, and interstitial lung disease. **Results:** The PANACEA framework includes seven domains (test Performance, disease mANagement, Cost, patient Experience, clinician Experience, researcher Experience, and Access) to assess the degree to which home-based monitoring assessments meet the conditions for clinical and research use in chronic lung disease. Knowledge gaps and recommendations for future research of home spirometry and pulse oximetry in asthma, bronchiectasis/cystic fibrosis, chronic obstructive pulmonary disease, and interstitial lung disease were identified. **Conclusions:** The development of the PANACEA framework allows standardized evaluation of home-based monitoring in chronic lung diseases to support clinical application and future research.

**Keywords:** chronic lung disease; home spirometry; home-based monitoring; pulse oximetry.

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14

Review

Thorac Surg Clin

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. 2025 Feb;35(1):123-129.

doi: 10.1016/j.thorsurg.2024.09.002. Epub 2024 Oct 9.

[Tracheobronchomalacia vs Excessive Dynamic Airway Collapse](#)

[Subin Lee](#)<sup>1</sup>, [Benjamin Medina](#)<sup>2</sup>, [Richard Lazzaro](#)<sup>3</sup>

Affiliations Expand

- PMID: 39515890
- DOI: [10.1016/j.thorsurg.2024.09.002](https://doi.org/10.1016/j.thorsurg.2024.09.002)

Abstract

Tracheobronchomalacia (TBM) is a frequently under-recognized condition that often coexists with other chronic respiratory diseases. The diagnosis of excessive central airway collapse requires consideration by the physician. Dynamic computed tomography scan of the chest and awake dynamic bronchoscopy are critical to establishing a diagnosis of TBM. Patients with severe TBM are candidates for tracheobronchoplasty. Multidisciplinary evaluation of patients with TBM has the potential benefit derived from shared decision-making to ensure patient optimization, prehabilitation, periprocedural care and posttreatment recovery,

rehabilitation, and follow-up. Robotic tracheobronchoplasty is safe and improves pulmonary function tests and quality of life in patients with severe TBM.

**Keywords:** Asthma; COPD; EDAC; TBM; Tracheobronchomalacia; Tracheobronchoplasty.

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Conflict of interest statement

Disclosure The authors have no disclosures.

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Ann Am Thorac Soc

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. 2025 Feb;22(2):200-207.

doi: 10.1513/AnnalsATS.202312-1089OC.

[Comorbidities, Tobacco Exposure, and Geography: Added Risk Factors of Heat and Cold Wave-related Mortality among U.S. Veterans with Chronic Obstructive Pulmonary Disease](#)

[Austin Rau](#)<sup>1</sup>, [Arianne K Baldomero](#)<sup>2,3</sup>, [Chris H Wendt](#)<sup>2,3</sup>, [Gillian A M Tarr](#)<sup>1</sup>, [Bruce H Alexander](#)<sup>1</sup>, [Jesse D Berman](#)<sup>1</sup>

Affiliations Expand

- PMID: 39441102
- DOI: [10.1513/AnnalsATS.202312-1089OC](#)

Abstract

**Rationale:** Understanding the health risks associated with extreme weather events is needed to inform policies to protect vulnerable populations. **Objectives:** To estimate heat and cold wave-related mortality risks in a cohort of veteran patients with chronic obstructive pulmonary disease (COPD) and explore disparities among strata of comorbidities, tobacco exposure, and urbanicity. **Methods:** We designed a time-stratified case-crossover study among deceased patients with COPD between 2016 and 2021 in the Veterans Health Administration system. Distributed lag models with conditional logistic regression estimated incidence rate ratios of heat and cold wave-associated mortality risk from lag days 0 to 3 for heatwaves and lag days 0 to 7 for cold waves. Attributable risks (ARs) per 100,000 patients were also calculated. **Results:** Of the 377,545 deceased patients with COPD, the largest heatwave-related mortality risk was in patients with COPD and asthma (AR, 14,016; 95% confidence interval [CI], -326, 30,706) across lag days 0 to 3. The largest cold wave-related mortality burden was in patients with COPD with no other reported comorbidities (AR, 1,704; 95% CI, 759, 2,686) across lag days 0 to 7. Patients residing in urban settings had the greatest heatwave-related (AR, 1,062; 95% CI, 576, 1,559) and cold wave-related (AR, 1,261; 95% CI, 440, 2,105) mortality risk (across lag days 0 to 1 and 0 to 7, respectively). There were no differences in mortality risk by tobacco exposure. **Conclusions:** Our findings show that individuals with COPD are susceptible to heat and cold waves. This information can inform clinical practice and public health policy about the mortality risk vulnerable populations experience with respect to extreme weather conditions. Furthermore, our results may be used in the development and refinement of future extreme weather warning systems designed for public health purposes.

**Keywords:** COPD; climate change; cold wave; heatwave; mortality.

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16

Am J Respir Crit Care Med

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. 2025 Feb;211(2):292-293.

doi: 10.1164/rccm.202409-1788LE.

[Dose of Inhaled Corticosteroids and Cardiovascular Disease in Asthma: An Unexpected Misstep?](#)

[Paola Rogliani](#)<sup>1</sup>, [Luigino Calzetta](#)<sup>2</sup>

Affiliations Expand

- PMID: 39405563
- DOI: [10.1164/rccm.202409-1788LE](#)

*No abstract available*

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17

Int Forum Allergy Rhinol

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. 2025 Feb;15(2):200-202.

doi: 10.1002/alr.23462. Epub 2024 Oct 8.

[Effects of functional endoscopic sinus surgery on asthma control in patients with comorbid chronic rhinosinusitis and asthma: A national database study](#)

[Mbuyi Madeleine Kabongo](#)<sup>1</sup>, [Joshua M Levy](#)<sup>1,2</sup>, [Lauren T Roland](#)<sup>3</sup>

Affiliations Expand

- PMID: 39376184

- DOI: [10.1002/alr.23462](https://doi.org/10.1002/alr.23462)

## Abstract

In patients with chronic rhinosinusitis and comorbid asthma, patients with surgical intervention required less asthma rescue medication, as compared to those who did not undergo surgery. Following sinus surgery, patients with chronic rhinosinusitis and asthma required more asthma medication, as compared to the time period prior to surgery.

Keywords: asthma; chronic rhinosinusitis; endoscopic sinus surgery.

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18

## Editorial

Am J Respir Cell Mol Biol

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. 2025 Feb;72(2):117-118.

doi: 10.1165/rcmb.2024-0374ED.

[Airway Smooth Muscle Dysfunction in Asthma: Releasing the Anchor](#)

[Anthony N Gerber](#)<sup>1</sup>

Affiliations [Expand](#)

- PMID: 39173148

- DOI: [10.1165/rcmb.2024-0374ED](https://doi.org/10.1165/rcmb.2024-0374ED)

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Comment on

- [A-Kinase-Anchoring Protein Subtypes Differentially Regulate GPCR Signaling and Function in Human Airway Smooth Muscle.](#)

Javed E, Nayak AP, Jannu AK, Cohen AH, Dewes I, Wang R, Tang DD, Deshpande DA, Penn RB. Am J Respir Cell Mol Biol. 2025 Feb;72(2):133-144. doi: 10.1165/rcmb.2023-0358OC.PMID: 39141573

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19

Clin Exp Allergy

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. 2025 Jan 30.

doi: 10.1111/cea.70002. Online ahead of print.

[Evaluation of Small Airways Dysfunction With Dupilumab Using Airway Oscillometry in Uncontrolled Severe Asthma](#)

[Kirsten E Stewart](#)<sup>1</sup>, [Chris RuiWen Kuo](#)<sup>1</sup>, [Rory Chan](#)<sup>1</sup>, [Brian J Lipworth](#)<sup>1</sup>

Affiliations Expand

- PMID: 39887823
- DOI: [10.1111/cea.70002](https://doi.org/10.1111/cea.70002)

**No abstract available**

**Keywords:** asthma; biologics; dupilumab; oscillometry; small airways dysfunction.

**Supplementary info**

**Grants and funding** Expand

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20

**Eur Respir J**

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. 2025 Jan 30:2401461.

doi: 10.1183/13993003.01461-2024. Online ahead of print.

[A proof-of-mechanism trial in asthma with lunsekimig, a bispecific nanobody® molecule](#)

[Annemie Deiteren](#)<sup>1</sup>, [Emmanuel Krupka](#)<sup>2</sup>, [Lieselot Bontinck](#)<sup>3</sup>, [Karine Imberdis](#)<sup>2</sup>, [Griet Conickx](#)<sup>3</sup>, [Selcuk Bas](#)<sup>4</sup>, [Naimish Patel](#)<sup>5</sup>, [Heribert W Staudinger](#)<sup>6</sup>, [Benjamin T Suratt](#)<sup>7</sup>

**Affiliations** Expand

- PMID: 39884759
- DOI: [10.1183/13993003.01461-2024](#)

**Abstract**

**Background:** Monovalent biologics blocking thymic stromal lymphopoietin or interleukin-13 have been shown to elicit pharmacodynamic responses in asthma following a single dose. Therefore, dual blockade of these cytokines may result in an enhanced response compared to single targeting and has the potential to break efficacy ceilings in asthma. This study assessed the safety and tolerability of lunsekimig, a bispecific NANOBODY® molecule that blocks thymic stromal lymphopoietin and interleukin-13, and its effect on Type 2 inflammatory biomarkers and lung function in asthma.

**Methods:** This was a Phase 1b, single-dose (subcutaneous lunsekimig 400 mg or placebo), randomised (2:1), double-blind, proof-of-mechanism study in 36 participants with mild-to-moderate asthma and elevated fractional exhaled nitric

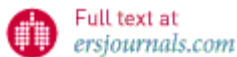
oxide ( $\geq 25$  ppb), a marker of airway inflammation. The primary endpoint was safety and tolerability through Day 71. The main pharmacodynamic secondary endpoint was change from baseline in fractional exhaled nitric oxide at Day 29.

**Results:** Lunsekimig was well tolerated, with no serious treatment-emergent adverse events. Fractional exhaled nitric oxide was significantly reduced from Day 8 through Day 29 after a single dose, with change from baseline of  $-40.9$  ppb (90% CI:  $-55.43$  to  $-26.39$ ;  $p < 0.0001$ ) *versus* placebo at Day 29. Blood-based Type 2 biomarkers at Day 29 were significantly reduced from baseline. Lung function, particularly small airway dysfunction, was numerically improved at Day 29, most notably in participants with impaired lung function at baseline.

**Conclusions:** A single dose of lunsekimig was well tolerated, significantly suppressed Type 2 inflammation, and improved lung function in mild-to-moderate asthma.

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. 2025 Jan 30;65(1):25E6501.

doi: 10.1183/13993003.E6501-2025. Print 2025 Jan.

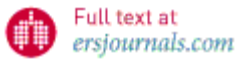
[ERJ Podcast January 2025: Treatment response to mepolizumab in severe eosinophilic asthma](#)

*No authors listed*

- PMID: 39884754
- DOI: [10.1183/13993003.E6501-2025](https://doi.org/10.1183/13993003.E6501-2025)

*No abstract available*

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## Eur Respir J

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. 2025 Jan 30:2401497.

doi: 10.1183/13993003.01497-2024. Online ahead of print.

## [Pre-biologic disease trajectories are associated with morbidity burden and biologic treatment response in severe asthma](#)

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## Affiliations Expand

- PMID: 39788633
- DOI: [10.1183/13993003.01497-2024](#)

## Free article

## Abstract

**Background:** Biologics can induce remission in some patients with severe asthma, however, little is known about pre-biologic disease trajectories and their association with outcomes from biological treatment. We aimed to identify long-term trajectories of disease progression in patients initiating biologics and investigate trajectory associations with disease burden and impact on biologic therapy efficacy.

**Methods:** Patients in the Danish Severe Asthma Registry initiating biologic therapy between 2016-2022 were included and followed retrospectively in prescription databases starting 1995. We performed sequence analysis for inhaled corticosteroid

(ICS) treatment intensity over time combined with unsupervised trajectory clustering.

**Results:** In total, 755 patients were included and three pre-biologic disease trajectories were identified: Chronic severe asthma (26%), Gradual onset severe asthma (35%), Recent, sudden onset severe asthma (39%). Chronic severe asthma patients were older, had the longest disease duration (35 years), the most impaired pulmonary function, the highest comorbidity prevalence and the lowest employment rate. *Recent, sudden onset severe asthma* patients were younger, had shorter disease duration (5 years), more tobacco exposure and the least impaired lung function. *Gradual onset severe asthma* had an intermediate burden of disease. The *Chronic severe asthma* cluster demonstrated the lowest prevalence of remission (17%) compared to the *Gradual onset severe asthma* (29%) and *Recent onset severe asthma* (32%) clusters.

**Conclusions:** Three pre-biologic disease trajectories were identified, with increased disease duration and activity associating with asthma- and comorbidity burden. Early intervention may be key to prevent irreversible adverse outcomes for patients with severe asthma.

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. 2025 Jan 30;65(1):2400782.

doi: 10.1183/13993003.00782-2024. Print 2025 Jan.

[Distinct trajectories of treatment response to mepolizumab toward remission in patients with severe eosinophilic asthma](#)

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Affiliations Expand

- PMID: 39401859
- DOI: [10.1183/13993003.00782-2024](https://doi.org/10.1183/13993003.00782-2024)

## Abstract

**Background:** Patients with severe eosinophilic asthma, characterised by a high disease burden, benefit from mepolizumab, which improves symptoms and reduces exacerbations, potentially leading to clinical remission in a subgroup. This study aimed to identify treatment response trajectories to mepolizumab for severe eosinophilic asthma and to assess the achievement of clinical remission.

**Methods:** Data from the Australian Mepolizumab Registry were used to assess treatment responses at 3, 6 and 12 months. The treatment response trajectories were identified using a group-based trajectory model. The proportions achieving clinical remission at 12 months, which was defined as well-controlled symptoms, no exacerbations and no oral corticosteroid (OCS) use for asthma management, were compared between trajectories, and baseline predictors of the trajectories were identified using logistic regression analysis.

**Results:** We identified three trajectory groups: Group 1, "Responsive asthma with less OCS use" (n=170); Group 2, "Responsive late-onset asthma" (n=58); and Group 3, "Obstructed and less responsive asthma" (n=70). Groups 1 and 2 demonstrated higher proportions achieving clinical remission at 36.5% and 25.9%, respectively, compared to Group 3 with 5.7% (p<0.001). Baseline predictors for assigned groups included lower OCS dose in Group 1; greater forced expiratory volume in 1 s percentage predicted, higher Asthma Quality of Life Questionnaire score, higher OCS dose and nasal polyps in Group 2; with Group 3 as the reference.

**Conclusions:** Treatment response to mepolizumab in severe eosinophilic asthma follows three trajectories with varying proportions achieving clinical remission and differing baseline characteristics. Treatment response variability may influence the achievement of clinical remission with mepolizumab therapy.

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## Conflict of interest statement

**Conflicts of interest:** Y. Hamada reports personal fees from AstraZeneca and Kyorin, outside the submitted work. D. Thomas reports grants from GlaxoSmithKline, outside the submitted work. E.S. Harvey reports grants from GlaxoSmithKline that were paid to her employer, during the conduct of the study. S. Stevens has nothing to disclose. M. Fricker reports grants and receipt of drugs from GlaxoSmithKline, outside the submitted work. H. Lewthwaite reports support for the present manuscript from NHMRC Centre of Research Excellence in Treatable Traits, grants from Hunter Medical Research Institute, payment or honoraria for lectures, presentations, manuscript writing or educational events from Exercise and Sports Science Australia, European Respiratory Society and Lung Foundation Australia, support for attending meetings from Asthma and Breathing Research Program Hunter Medical Research Institution, and stock (or stock options) with 4D Medical. V.M. McDonald reports support for the present manuscript from NHMRC, grants

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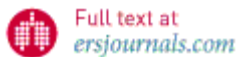
- [Trajectories of responses to mepolizumab in severe asthma.](#)

Nolasco S, Mukherjee M, Nair P. *Eur Respir J*. 2025 Jan 30;65(1):2402023. doi: 10.1183/13993003.02023-2024. Print 2025 Jan. PMID: 39884757 No abstract available.

#### Supplementary info

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24

#### Meta-Analysis

#### BMC Pulm Med

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. 2025 Jan 29;25(1):48.

doi: 10.1186/s12890-025-03516-0.

## [Cannabis consumption and risk of asthma: a systematic review and meta-analysis](#)

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### Affiliations Expand

- PMID: 39881272
- PMCID: [PMC11780798](#)
- DOI: [10.1186/s12890-025-03516-0](#)

### Abstract

**Background:** Cannabis is the third most widely used psychoactive substance globally, and its consumption has been increasing, particularly with the growing trend of legalization for medicinal and recreational use. Recent studies have raised concerns about the potential impact of cannabis on respiratory health, specifically the risk of asthma, a significant public health concern. This systematic review aimed to consolidate research on the association between cannabis use and the risk of asthma.

**Methods:** A comprehensive search was conducted across PubMed, Embase, and Web of Science, covering studies published up to September 30, 2024. We included peer-reviewed observational studies evaluating the link between cannabis consumption and the risk of asthma diagnosis. Data synthesis employed a random-effects meta-analysis to account for heterogeneity. R statistical software (version 4.4) was used for statistical analyses.

**Results:** The search yielded 8 relevant studies after screening 1,887 records. The pooled odds ratio (OR) for the association between cannabis consumption and the risk of asthma diagnosis was 1.31, 95% confidence interval (CI): 1.19-1.44, indicating greater odds of having asthma compared to non-users. Moderate heterogeneity was observed ( $I^2 = 46\%$ ), and sensitivity analysis confirmed the robustness of the findings.

**Conclusion:** This systematic review and meta-analysis identifies a significant association between cannabis use and greater odds of having asthma. These findings emphasize the importance of raising awareness about the potential respiratory risks associated with cannabis use. Future research should prioritize identifying moderating factors, such as the frequency and mode of cannabis consumption, to enhance understanding of this association and provide a stronger evidence base for potential public health interventions.

Clinical trial number: Not applicable.

Keywords: Asthma; Cannabis; Meta-analysis; Respiratory health; Systematic review.

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Conflict of interest statement

Declarations. Ethical approval: Not applicable. Consent to participate: Not applicable since this is a review and not involved any human. Competing interests: The authors declare no competing interests. Human ethics and consent to participate: Not applicable.

- [25 references](#)
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. 2025 Jan 29.

doi: 10.1164/rccm.202412-2473ED. Online ahead of print.

[Moving Away from Segregated Lung Function Equations: Effects of Transitioning to Race-neutral References in Children](#)

[Nadia L Krupp](#)<sup>1,2</sup>, [Erick Forno](#)<sup>1,3</sup>

Affiliations Expand

- PMID: 39879548

- DOI: [10.1164/rccm.202412-2473ED](https://doi.org/10.1164/rccm.202412-2473ED)

*No abstract available*

**Keywords:** Childhood asthma; Global Lung Initiative; Pulmonary function testing; Spirometry; Spirometry reference equations.

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. 2025 Jan 28.

doi: 10.1111/cea.14634. Online ahead of print.

[Relationship Between Bronchodilator Reversibility and Spirometry Response to Dupilumab in Type 2 High Uncontrolled Severe Asthma](#)

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Affiliations Expand

- PMID: 39875973
- DOI: [10.1111/cea.14634](https://doi.org/10.1111/cea.14634)

*No abstract available*

**Keywords:** asthma; bronchodilator; dupilumab; reversibility; spirometry.

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. 2025 Jan 28:1-13.

doi: 10.1080/02770903.2025.2455416. Online ahead of print.

[The efficacy and safety of Fluticasone Furoate/Umeclidinium/Vilanterol \(FF/UMEC/VI\) on cough symptoms in adult patients with asthma, A randomized double-blind, placebo-controlled, parallel group study: Chronic Cough in Asthma \(COCOA\) study](#)

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Affiliations Expand

- PMID: 39874464
- DOI: [10.1080/02770903.2025.2455416](https://doi.org/10.1080/02770903.2025.2455416)

Abstract

**Background** Persistent cough bothers many patients with asthma because it worsens their quality of life; therefore, it must be remedied immediately. The efficacy of triple therapy as a first-line treatment for cough remains unclear. To evaluate the effectiveness and safety of the triple therapy against persistent cough, the clinical effect of regular treatment with fluticasone furoate/umeclidinium/vilanterol (FF/UMEC/VI) or placebo in adult patients with asthma was investigated. **Methods** This randomized, double-blind, placebo-controlled, parallel-group multicentre trial recruited asthma patients with persistent cough from hospitals and primary care clinics between June 2022 and December 2023. Participants were randomly given FF/UMEC/VI 200/62.5/25 µg or placebo for 6 weeks. The primary endpoint was the average change in the cough symptom score from baseline to week 6. Secondary outcomes were effectiveness on cough-related disease burdens (asthma control questionnaire [ACQ]-5, Leicester cough

questionnaire [LCQ] and night-time awakening). Furthermore, lung function and adverse events were evaluated. Results The decrease from baseline in the cough symptom score at week 6 was significantly greater in the FF/UMEC/VI group than in the placebo group (p = 0.006). The ACQ-5 scores showed a greater decrease in the FF/UMEC/VI group than in the placebo group. The change from baseline in morning and evening FEV<sub>1</sub> increased in the FF/UMEC/VI group as with the results of peak expiratory flow. No significant adverse events associated with FF/UMEC/VI were noted. Conclusions In asthma patients with persistent cough, FF/UMEC/VI showed an early response and a significant effect on cough and lung function for 6 weeks of treatment. This study is registered with jRCTs031210412.

Keywords: asthma; clinical study; cough; triple therapy.

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. 2025 Jan 28.

doi: 10.1080/14728214.2025.2460529. Online ahead of print.

[Emerging biological treatments for asthma](#)

[Daniela Pastore](#)<sup>1</sup>, [Chiara Lupia](#)<sup>1</sup>, [Maria D'Amato](#)<sup>2</sup>, [Andrea Bruni](#)<sup>3</sup>, [Eugenio Garofalo](#)<sup>3</sup>, [Federico Longhini](#)<sup>3</sup>, [Luca Gallelli](#)<sup>1</sup>, [Alessandro Vatrella](#)<sup>4</sup>, [Girolamo Pelaia](#)<sup>1</sup>, [Corrado Pelaia](#)<sup>3</sup>

Affiliations Expand

- PMID: 39873193
- DOI: [10.1080/14728214.2025.2460529](https://doi.org/10.1080/14728214.2025.2460529)

## Abstract

**Introduction:** Severe asthma is a chronic airway disease characterized by many pathomechanisms known as endotypes. Biological therapies targeting severe asthma endotypes have significantly improved the treatment of this disease, thus remarkably bettering patient quality of life.

**Areas covered:** This review aims to describe current biological therapies for severe asthma, highlighting emerging ones. Several studies have confirmed the beneficial effects of currently available monoclonal antibodies targeting immunoglobulin E (IgE), interleukin-5 (IL-5) or its receptor, and interleukin-4 (IL-4)/interleukin-13 (IL-13) receptors (IL-4 R/IL-13 R). However, patients with T2-low asthma are not eligible for the above biological therapies.

**Expert opinion:** New treatments are now moving toward targeting the upstream pathways of asthma pathogenesis, coordinated by innate cytokines such as alarmins. These key proinflammatory mediators orchestrate the activation of complex cellular networks including both innate and adaptive immune responses. Alarmins include thymic stromal lymphopoietin (TSLP), interleukin-25 (IL-25), and interleukin-33 (IL-33), which are released from injured airway epithelial cells. TSLP and the other alarmins are suitable targets of biological therapies which are effective for add-on treatment of type 2 asthma. Moreover, anti-alarmin monoclonal antibodies can be also beneficial for patients with T2-low, poorly controlled severe asthma.

**Keywords:** Severe asthma endotypes; alarmins; biologic drugs; innate and adaptive immune responses.

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. 2025 Jan 27;11(1):00172-2024.

doi: 10.1183/23120541.00172-2024. eCollection 2025 Jan.

[Systemic corticosteroid dose-response effects in asthma: an observational cohort study](#)

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Affiliations Expand

- PMID: 39872385
- PMCID: [PMC11770758](#)
- DOI: [10.1183/23120541.00172-2024](#)

Abstract

This study is among the first in a large patient database over an extended period to identify a link between SCS use/overuse and mortality in asthma in a positive dose-response relationship with average daily exposure and cumulative dose categories <https://bit.ly/3zzl2QN>.

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Conflict of interest statement

Conflict of interest: X. Xu, T.N. Tran and S. Golam are employees of AstraZeneca. V. Carter is an employee of the Observational and Pragmatic Research Institute (OPRI), which received funding from AstraZeneca to perform this study. D.B. Price has board membership with AstraZeneca, Boehringer Ingelheim, Chiesi, Mylan, Novartis, Regeneron Pharmaceuticals, Sanofi Genzyme, ThermoFisher; consultancy agreements with Airway Vista Secretariat, AstraZeneca, Boehringer Ingelheim, Chiesi, EPG Communication Holdings Ltd, FIECON Ltd, Fieldwork International, GlaxoSmithKline, Mylan, Mundipharma, Novartis, OM Pharma SA, PeerVoice, Phadia AB, Spirosure Inc., Strategic North Limited, Synapse Research Management Partners SL, Talos Health Solutions, Theravance and WebMD Global LLC; grants and unrestricted funding for investigator-initiated studies (conducted through OPRI) from AstraZeneca, Boehringer Ingelheim, Chiesi, Mylan, Novartis, Regeneron Pharmaceuticals, Respiratory Effectiveness Group, Sanofi Genzyme, Theravance and the UK National Health Service; payment for lectures/speaking engagements from AstraZeneca, Boehringer Ingelheim, Chiesi, Cipla, GlaxoSmithKline, Kyorin, Mylan, Mundipharma, Novartis, Regeneron Pharmaceuticals and Sanofi Genzyme; payment for travel/accommodation/meeting expenses from AstraZeneca, Boehringer Ingelheim, Mundipharma, Mylan, Novartis, ThermoFisher; stock/stock options from AKL Research and Development Ltd, which produces phytopharmaceuticals; owns 74% of the social enterprise Optimum Patient Care Ltd (Australia and UK) and 92.61% of OPRI (Singapore); has 5% shareholding in Timestamp, which develops adherence monitoring technology; is peer reviewer for grant committees of the UK Efficacy and Mechanism Evaluation programme and Health Technology Assessment; and was an expert witness for GlaxoSmithKline.

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. 2025 Jan 27;26(1):40.

doi: [10.1186/s12931-025-03114-y](https://doi.org/10.1186/s12931-025-03114-y).

[Comparative analysis of ambient, in-home, and personal exposures reveals associations between breathing zone pollutant levels and asthma exacerbations in high-risk children](#)

[Camille M Moore](#)<sup>1,2,3</sup>, [Jonathan Thornburg](#)<sup>4</sup>, [Elizabeth A Secor](#)<sup>5</sup>, [Katharine L Hamlington](#)<sup>6,7</sup>, [Allison M Schiltz](#)<sup>6,7</sup>, [Kristy L Freeman](#)<sup>6,7</sup>, [Jamie L Everman](#)<sup>5</sup>, [Tasha E Fingerlin](#)<sup>5</sup>, [Andrew H Liu](#)<sup>6,7</sup>, [Max A Seibold](#)<sup>5,8,9</sup>

Affiliations Expand

- PMID: 39871239
- PMCID: [PMC11773965](#)
- DOI: [10.1186/s12931-025-03114-y](https://doi.org/10.1186/s12931-025-03114-y)

Abstract

**Background:** Air pollution is associated with poor asthma outcomes in children. However, most studies focus on ambient or indoor monitor pollution levels. Few studies evaluate breathing zone exposures, which may be more consequential for asthma outcomes.

**Methods:** We measured personal exposures to NO<sub>2</sub>, O<sub>3</sub>, PM<sub>10</sub> and PM<sub>10</sub> constituents, including black carbon (BC), brown carbon (BrC), environmental tobacco smoke (ETS), endotoxins, and  $\beta$ -glucan, in a cohort of children with exacerbation-prone asthma for 72 h using wearable monitors. Personal exposures were compared to concentrations from in-home monitors in the child's bedroom and ambient EPA air quality monitoring using correlation analyses. Personal exposures were tested for association with lung function and compared between participants with and without well-controlled asthma and signs of exacerbation in the prior 60 days using censored regression with robust standard errors.

**Results:** 81 children completed 219 monitoring sessions. Personal NO<sub>2</sub>, O<sub>3</sub>, and PM<sub>10</sub> exposures ranged from < 2 to 99.1 parts per billion (ppb), < 1.5 to 23.3 ppb, and < 1 to 141.9  $\mu\text{g}/\text{m}^3$ , respectively. Personal endotoxin ranged from 0.04 to 101.3 EU/m<sup>3</sup>,  $\beta$ -glucan from 18.5 to 1,162 pg/m<sup>3</sup>, BC from < 0.3 to 46.9  $\mu\text{g}/\text{m}^3$ , BrC from < 0.3 to 6.1  $\mu\text{g}/\text{m}^3$ , and ETS from < 0.3 to 56.6  $\mu\text{g}/\text{m}^3$ . Correlations between personal and ambient PM<sub>10</sub>, NO<sub>2</sub>, and O<sub>3</sub> concentrations were poor, whereas personal PM<sub>10</sub> and NO<sub>2</sub> correlated with in-home concentrations. In-home monitoring less frequently detected BrC (Personal:79% > lower limit of detection, Home:36.8%) and ETS (Personal:83.7%, Home:4.1%) than personal exposures, and detected BC in participants without personal exposure (Personal: 26.5%, Home: 96%). Personal exposures were not significantly associated with lung function or daily asthma control. Children requiring corticosteroid treatment for asthma exacerbation within 60 days of exposure monitoring had 1.98, 2.21 and 2.04 times higher personal exposures to BrC (p < 0.001; 95% CI: 1.43-2.37), ETS (p = 0.007; 95% CI: 1.25-3.91), and endotoxin (p = 0.012; 95% CI: 1.14-3.68), respectively.

**Conclusions:** Although in-home monitoring was correlated with personal exposure to PM<sub>10</sub> and NO<sub>2</sub>, in-home detection of ETS and BrC was not associated with personal exposures. Personal PM<sub>10</sub> exposures in general, as well as BrC, ETS, and endotoxin levels were associated with recent childhood asthma exacerbations.

**Clinical trial number:** Not applicable.

**Keywords:** Asthma; Environmental monitoring; Exacerbations; Particulates; Personal exposures; Pollutant.

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**Conflict of interest statement**

**Declarations.** Ethics approval and consent to participate: The ENIGMA study was performed in accordance with the Declaration of Helsinki. The Colorado Multiple Institutional Review Board approved the protocol for the ENIGMA study. The participant and at least one legal guardian provided informed written consent and, if age-appropriate, assent. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- [80 references](#)
- [6 figures](#)

**Supplementary info**

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## Pulm Ther

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. 2025 Jan 27.

doi: [10.1007/s41030-024-00285-9](https://doi.org/10.1007/s41030-024-00285-9). Online ahead of print.

## [Retrospective Cohort Study of Elderly Users of Single- or Multiple-Inhaler Triple Therapy for the Treatment of Asthma in the USA](#)

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## Affiliations Expand

- PMID: 39869154
- DOI: [10.1007/s41030-024-00285-9](https://doi.org/10.1007/s41030-024-00285-9)

## Free article

## Abstract

**Introduction:** Escalation to single- or multiple-inhaler triple therapy (SITT; MITT) is a recommended option for patients with asthma who remain uncontrolled by medium-dose inhaled corticosteroid/long-acting  $\beta_2$ -agonist; however, characterization of elderly users of triple therapy is limited. This real-world cohort study describes demographics and clinical characteristics of elderly patients with asthma with and without comorbid chronic obstructive pulmonary disease (COPD) who are new users of triple therapy, and asthma treatment patterns preceding triple therapy initiation.

**Methods:** This retrospective cohort study used administrative claims data from the Optum Clinformatics Data Mart database. Eligible patients were  $\geq 65$  years of age with asthma or with asthma and comorbid COPD who initiated either triple therapy

with single-inhaler fluticasone furoate/umeclidinium/vilanterol (FF/UMEC/VI; 100/62.5/25 µg) or MITT between September 18, 2017 and September 30, 2020. Demographics, clinical characteristics, healthcare resource utilization, healthcare costs, and asthma treatment patterns were described in the 12-month period before triple therapy initiation (baseline period).

**Results:** In total, 15,557 patients were included. Among FF/UMEC/VI initiators with asthma (N = 635) mean age was 73.3 years and 66.6% were female. During the baseline period, > 75% of patients used controller therapy, > 92% used rescue medications, 27.9% experienced ≥ 1 asthma-related exacerbation, with mean annual exacerbation rate of 0.42, and mean all-cause healthcare costs were \$23,407. Patients with asthma initiating MITT and patients with asthma and comorbid COPD initiating FF/UMEC/VI or MITT had similar characteristics, healthcare resource utilization, healthcare costs, and asthma treatment patterns to FF/UMEC/VI initiators with asthma.

**Conclusions:** Triple therapy is often initiated following use of other asthma controller medications in real-world practice. Substantial rescue medication use and high disease and economic burden among this elderly patient population suggest that their asthma was not adequately controlled prior to triple therapy initiation. This retrospective study provides an early profile of elderly patients with asthma in the USA.

**Keywords:** Asthma treatment pattern; Elderly patients with asthma; Elderly patients with asthma and comorbid COPD; Fluticasone furoate/umeclidinium/vilanterol; Multiple-inhaler triple therapy; Real-world study; Single-inhaler triple therapy.

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#### Conflict of interest statement

**Declarations. Conflict of Interest:** Russell A. Settipane has received compensation from GSK for speaking, advisory board services, and serving as an independent contractor for clinical trial research. Guillaume Germain, Francois Laliberté, Malena Mahendran, Annalise Hilts, and Mei Sheng Duh are employees of Analysis Group, Inc., a consulting company that received research funds from GSK to conduct this study. Rosirene Paczkowski and Emmeline Burrows are employed by GSK and hold financial equities in GSK. ELLIPTA and DISKUS are owned by or licensed to the GSK Group of companies. Clinformatics is a trademark of OptumInsight, Inc. **Ethical Approval:** This study complied with all applicable laws regarding subject privacy. No direct subject contact or primary collection of individual human subject data occurred. Study results were in tabular form and aggregate analyses that omit subject identification; therefore informed consent and ethics committee or institutional review board approval are not required. Any publications and reports will not include subject identifiers. Furthermore, this study used de-identified data that complied with the requirements of the Health Insurance Portability and Accountability Act (HIPAA).

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Ann Allergy Asthma Immunol

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. 2025 Jan 25:S1081-1206(25)00064-X.

doi: 10.1016/j.anai.2025.01.024. Online ahead of print.

[Real world effects of tezepelumab on small airways dysfunction in severe refractory asthma](#)

[Robert Greig<sup>1</sup>](#), [Rory Chan<sup>1</sup>](#), [Tom C Fardon<sup>1</sup>](#), [Brian J Lipworth<sup>2</sup>](#)

Affiliations Expand

- PMID: 39870209
- DOI: [10.1016/j.anai.2025.01.024](#)

*No abstract available*

Keywords: Asthma; airway oscillometry; small airways dysfunction; tezepelumab.

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J Asthma

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. 2025 Jan 25:1-7.

doi: 10.1080/02770903.2025.2453507. Online ahead of print.

**[The assessment of exhaled nitric oxide in patients with obesity and asthma before and after exercise](#)**

**[Burcu Parlak](#)<sup>1</sup>, [Zeynep Ülker Tamay Altinel](#)<sup>2</sup>, [Nermin Güler](#)<sup>2</sup>**

Affiliations Expand

- PMID: 39804570
- DOI: [10.1080/02770903.2025.2453507](https://doi.org/10.1080/02770903.2025.2453507)

**Abstract**

**Objective:** It is well-known that children who suffer from obesity and asthma may also have exercise-induced bronchospasm. Exhaled nitric oxide is an indicator of airway inflammation, and could be affected by exercise. This study looked at how exercise, which is a typical cause of acute airway obstruction, affects the levels of FeNO and spirometric parameters in obese and asthmatic children.

**Materials and methods:** Seventy children between the ages of 6 and 18 were divided into four groups: healthy children, obese children with asthma, obese children without asthma, and normal-weight asthmatic children. FeNO and spirometric parameters were assessed before and after exercise. Their heart rate was raised to 160-170 beats per minute by walking on a flat surface.

**Results:** The highest mean FeNO was seen in the asthmatic-obese group, while the lowest mean FeNO was found in the healthy group. MEF25-75 increased with exercise in the obese non-asthmatic group. FEV1/FVC was the lowest in the asthmatic-obese group.

**Conclusions:** FeNO and FEV1/FVC have a strong association with asthma. The highest values of FeNO found in asthma-obesity combined. It was seen that obesity increased inflammation but exercise did not affect FeNO values. FeNO and FEV1 values were found to be higher in obese patients with and without asthma than normal weight and overweight asthmatics and non-asthmatics.

**Keywords:** Asthma; FeNO; exercise; obesity; pediatric; pulmonary function test.

Full text links



**"rhinitis"[MeSH Terms] OR rhinitis[Text Word]**

## Review

### EClinicalMedicine

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. 2025 Jan 8:80:103050.

doi: 10.1016/j.eclinm.2024.103050. eCollection 2025 Feb.

### [Roads to remission: evolving treatment concepts in type 2 inflammatory diseases](#)

[Marek Lommatzsch](#)<sup>1</sup>, [Katharina Blumchen](#)<sup>2</sup>, [Lisa A Beck](#)<sup>3</sup>, [Jean Bousquet](#)<sup>4 5</sup>, [Guy G Brusselle](#)<sup>6</sup>, [Wytske J Fokkens](#)<sup>7</sup>, [Eckard Hamelmann](#)<sup>8</sup>, [Susanne Lau](#)<sup>9</sup>, [Hagen Ott](#)<sup>10</sup>, [Oliver Pfaar](#)<sup>11</sup>, [Hugh A Sampson](#)<sup>12</sup>, [Josef S Smolen](#)<sup>13</sup>, [Christian Taube](#)<sup>14</sup>, [Ingo H Tarner](#)<sup>15</sup>, [Martin Wagenmann](#)<sup>16</sup>, [Thomas Werfel](#)<sup>17</sup>, [Margitta Worm](#)<sup>18</sup>, [Harald Renz](#)<sup>19</sup>

### Affiliations Expand

- PMID: 39867971
- PMCID: [PMC11764424](#)
- DOI: [10.1016/j.eclinm.2024.103050](#)

### Abstract

Non-communicable diseases (NCDs) characterised by type 2 inflammation, including asthma, allergic rhinitis, chronic rhinosinusitis with nasal polyps, atopic dermatitis, food allergies and eosinophilic esophagitis, are increasing in prevalence worldwide. Currently, there is a major paradigm shift in the management of these diseases, towards the concept of disease modification and the treatment goal remission, regardless of severity and age. Remission as a treatment goal in chronic inflammatory NCDs was first introduced in rheumatoid arthritis, and then adopted in other non-type 2 inflammatory diseases. Among diseases with type 2 Inflammation, this concept is novel and currently most advanced in asthma. This new paradigm has been developed based on a better understanding of the pathophysiology of type 2 inflammation and the advent of highly effective drugs selectively interfering with type 2 pathways. Here, we review the evolution of the new remission concepts in type 2 inflammatory diseases and discuss associated challenges and future research needs.

Funding: None.

Keywords: Disease modification; Remission; Type 2 inflammation.

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## Conflict of interest statement

ML reports grants for research or clinical trials, paid to his institution, from AstraZeneca, Deutsche Forschungsgemeinschaft (DFG), and GSK; and consulting fees, travel expenses, or honoraria for lectures from ALK, Allergopharma, Apontis, AstraZeneca, Berlin-Chemie, Boehringer Ingelheim, Chiesi, GSK, HAL Allergy, Leti, Novartis, MSD, Sanofi, Stallergenes, Teva. KB reports on grants for research or clinical trials, paid to the institution from Aimmune therapeutics, Nestle, DBV technologies, Novartis, Hipp GmbH and consulting fees, travel expenses, or honoraria for lectures from ALK-Abello Arzneimittel GmbH, Allergopharma, Aimmune therapeutics, Allergy therapeutics, Danone Deutschland GmbH, DBV Technologies, Engelhard Arzneimittel, Novartis Pharma AG, Sanofi, ThermoFisher Scientific, Mylan Germany GmbH, German society of clinical chemistry and laboratory medicine, Stallergenes GmbH, German society of allergology and clinical immunology, German society of pediatric allergology and environmental medicine, Austrian society of children and adolescent medicine, Medical association of German allergologists, European academy of allergology and clinical immunology. LAB reports consulting fees from Allakos, Amgen, Arcutis, Arena Pharmaceuticals, AstraZeneca, Astria Therapeutics, Evelo Biosciences, Escient Pharma, Galderma, Incyte, Invea Therapeutics, Janssen, LEO Pharma, Merck, Nektar Therapeutics, Novartis, Numab Therapeutics, Pfizer, Rapt Therapeutics, Regeneron Pharmaceuticals Inc., Ribon Therapeutics, Sanofi-Aventis/Genzyme, Sitryx Therapeutics, Stealth BioTherapeutics, Trevi Therapeutics, UCB Pharma, Union therapeutics, and Xencor and research grants from Abbvie, AstraZeneca, Pfizer, Regeneron Pharmaceuticals Inc., and Sanofi. JB reports personal fees from Cipla, Menarini, Mylan, Novartis, Purina, Sanofi-Aventis, Teva, Noucor, KYomed-Innov, Mask-air-SAS. GGB reports consulting fees, travel expenses, or honoraria for lectures from AstraZeneca, Boehringer-Ingelheim, Chiesi, GlaxoSmithKline, Merck Sharp & Dohme, Novartis, Sanofi Regeneron. WF reports consultation and/or speaker fees from Dianotic, GSK, Novartis, Sanofi-Aventis/Regeneron and AstraZeneca. EH reports grants for research or clinical trials, paid to his institution, from the German Ministry of Education and Research (BMBF), InfectoPharm, Wolff, AstraZeneca; and consulting fees, travel expenses, or honoraria for lectures from ALK, Allergopharma, AstraZeneca, Berlin-Chemie, Boehringer Ingelheim, GSK, HAL Allergy, Leti, Novartis, Sanofi, Stallergenes. SL reports research grants from DFG (German Research Foundation), Einstein Foundation, DBV, and consultation and/or speaker fees from Allergopharma, ALK, DBV, GSK, LETI, Leo-Pharma, Lilly, Viatrix, Sanofi-Aventis. OP reports grants and/or personal fees and/or travel support from ALK-Abelló, Allergopharma, Stallergenes Greer, HAL Allergy Holding B.V./HAL Allergie GmbH, Bencard Allergie GmbH/Allergy Therapeutics, Laboratorios LETI/LETI Pharma, GlaxoSmithKline, ROXALL Medizin, Novartis, Sanofi-Aventis and Sanofi-Genzyme, Med Update Europe GmbH, streamedup! GmbH, Pohl-Boskamp, Immunotek S.L., John Wiley and Sons/AS, Paul-Martini-Stiftung (PMS), Regeneron Pharmaceuticals Inc., RG Aertzefortbildung, Institut für Disease Management, Springer GmbH, AstraZeneca, IQVIA Commercial, Ingress Health, Wort&Bild Verlag, Verlag ME, Procter&Gamble, ALTAMIRA, Meinhardt Congress GmbH, Deutsche Forschungsgemeinschaft (DFG), Thieme Verlag, Deutsche AllergieLiga e.V., AeDA, Alfried-Krupp Krankenhaus, Red Maple Trials Inc., Königlich Dänisches Generalkonsulat, Medizinische Hochschule Hannover, ECM Expro&Conference Management, Technical University Dresden, Lilly, Japanese Society of Allergy, Forum für Medizinische Fortbildung, Dustri-Verlag, Pneumolive, ASIT Biotech, LOFARMA, Almirall, Paul-Ehrlich-Institut. HAS reports grant funding to his

institution from NIH/NIAID and personal consulting fees from DBV Technologies, N-Fold, Alpina Biotechnology and Siolta, and stock options from DBV Technologies and N-Fold Therapeutics. MWa reports grants for research or clinical trials, paid to his institution, from ALK-Abelló, AstraZeneca, EU, GlaxoSmithKline, Novartis, Regeneron, Sanofi-Aventis, Takeda; and consulting fees, travel expenses, or honoraria for lectures from Allergopharma, ALK-Abelló, AstraZeneca, CSL Behring, Genzyme, GSK, HAL Allergie, Infectopharm, LETI Pharma, Novartis, Regeneron, Sanofi, Stallergenes. TW reports institutional grants or personal fees for lectures or advisory boards from AbbVie, Almirall, Beiersdorf, Eli Lilly, Galderma, Janssen/JNJ, Leo Pharma, Novartis, Pfizer, Sanofi-Regeneron. MWo reports honoraria or consultation fees from Novartis Pharma GmbH, Sanofi-Aventis Deutschland GmbH, DBV Technologies S.A, Aimmune Therapeutics UK Limited, Leo Pharma GmbH, AstraZeneca GmbH, ALK-Abelló Arzneimittel GmbH, Lilly Deutschland GmbH, Kymab Limited, Amgen GmbH, Abbvie Deutschland GmbH & Co. KG, Pfizer Pharma GmbH, Mylan Germany GmbH (A Viatris Company), Boehringer Ingelheim Pharma GmbH & Co. KG, GlaxoSmithKline GmbH & Co. KG, Almirall S. A., Amgen GmbH, Pfizer Deutschland GmbH, Bristol-Myers Squibb GmbH & Co. KG. HR reports grants from Deutsche Lungenzentrum (DZL), Lungenzentrum der Universitäten Gießen und Marburg (UGLMC), MIRACUM-Konsortium, Stiftung Pathobiochemie, Krankenhauspartnerschaftsprogramm DAAD and GIZ, Deutsche Forschungsgemeinschaft (DFG), Bundesministerium für Bildung und Forschung (BMBF), European Union (EU), and consultation and/or speaker fees from Allergopharma, Novartis, ThermoFisher, Danone, Bencard, Stallergenes, GSK, AstraZeneca, Sterna biologicals. HO, JSS, CT and IHT do not report any conflicts of interest.

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J Eval Clin Pract

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. 2025 Feb;31(1):e14308.

doi: 10.1111/jep.14308.

## [Length of Hospital Stay and Its Predictions Among Patients With Exacerbations of Chronic Respiratory Diseases](#)

[Haya Tabaza](#)<sup>1</sup>, [Rana Abu Farha](#)<sup>2</sup>, [Lobna Gharaibeh](#)<sup>3</sup>, [Mohammad Alwahsh](#)<sup>4</sup>, [Oriana Awwad](#)<sup>1,5</sup>

Affiliations Expand

- PMID: 39813080
- DOI: [10.1111/jep.14308](https://doi.org/10.1111/jep.14308)

### Abstract

**Background:** Chronic respiratory disorders such as asthma and chronic obstructive pulmonary disease (COPD) may deteriorate into acute exacerbations requiring hospitalization. Assessing the predictors of prolonged hospital stays could help identify potential interventions to reduce the burden on patients and healthcare systems.

**Aim:** This study aimed to identify the risk factors attributed to prolonged hospital stays among patients admitted with acute exacerbations of chronic respiratory disorders in Jordan.

**Methods:** A retrospective cohort study was conducted by reviewing the demographic and clinical characteristics of hospitalized patients with asthma and COPD exacerbations between January 2017 and July 2021. The recorded variables were checked for their independence. Simple and stepwise multivariate linear regressions were then performed to identify variables associated significantly with a longer hospital length of stay (LOS).

**Results:** A total of 896 cases were evaluated. The mean  $\pm$  SD stay was  $5.66 \pm 3.40$  days, whereas the median (IQR) was 5.00 (4.00) days. Variables associated significantly with prolonged LOS in the multivariate analysis were female gender ( $\beta = 0.089$ ,  $p = 0.011$ ), pulmonary hypertension ( $\beta = 0.093$ ,  $p = 0.004$ ), allergic rhinitis ( $\beta = 0.086$ ,  $p = 0.007$ ), ICU admission ( $\beta = 0.096$ ,  $p = 0.003$ ), requirement for mechanical ventilation ( $\beta = 0.102$ ,  $p = 0.002$ ), higher total number of medications ( $\beta = 0.281$ ,  $p < 0.001$ ) and the number of exacerbation-related medications ( $\beta = 0.200$ ,  $p < 0.001$ ). However, smoking ( $\beta = -0.091$ ,  $p = 0.008$ ) was significantly associated with a shorter LOS.

**Conclusions:** Gender, pulmonary hypertension, allergic rhinitis, ICU admission, mechanical ventilation, the number of medications and smoking were significantly related to LOS. These findings emphasize the importance of patients' demographics and their clinical status in determining LOS, hence providing protective interventions to shorten it.

**Keywords:** COPD; asthma; exacerbation; hospitalization; length of hospitalization; predictors.

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Review

Int Forum Allergy Rhinol

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. 2025 Feb;15(2):174-184.

doi: 10.1002/alr.23512. Epub 2025 Jan 6.

[Impact of Sinus Surgery on Nasal Discharge in Chronic Rhinosinusitis: A Systematic Review and Meta-Analysis](#)

[Ethan M Kallenberger<sup>1</sup>](#), [Erin E Briggs<sup>1,2</sup>](#), [Shaun A Nguyen<sup>1</sup>](#), [Asher T Ripp<sup>1,3</sup>](#), [Alexander N Duffy<sup>1</sup>](#), [Isabella V Schafer<sup>1</sup>](#), [Zachary M Soler<sup>1</sup>](#), [Jess C Mace<sup>4</sup>](#), [Timothy L Smith<sup>4</sup>](#), [Rodney J Schlosser<sup>1,5</sup>](#)

Affiliations Expand

- PMID: 39761371
- DOI: [10.1002/alr.23512](#)

Abstract

**Background:** Nasal discharge is one of the cardinal symptoms of chronic rhinosinusitis, impacting over 50% of patients. For patients with symptoms refractory to standard medical therapy, endoscopic sinus surgery is an option. The

objective of this study is to characterize how nasal discharge improves after surgery in patients with chronic rhinosinusitis.

**Methods:** The literature was searched for articles reporting nasal discharge symptom data both at baseline and after surgery. Specific symptoms of interest on the 22-item sinonasal outcome test (SNOT-22) were "need to blow nose," "runny nose," "postnasal discharge," and "thick nasal discharge." SNOT-22 scores ranged from 0 to 5 based upon severity. Visual analog scale equivalents were recorded when available. **RESULTS:** A total of 16 studies (n = 7193) were included in the analysis. All four nasal discharge questions on the SNOT-22 saw significant improvement, with need to blow nose (−1.8 [95% confidence interval, CI: −2.3, −1.2]) and runny nose (−1.8 [95% CI: −1.9, −1.1]) seeing the largest benefit. Patients with nasal polyps saw more improvement than those without polyps. The difference between polyp and no polyp groups was significant for need to blow nose (−1.9 vs. −1.0, p < 0.001) and runny nose (−1.8 vs. −1.0, p < 0.0001). Patients undergoing index or revision surgery all saw significant improvement in symptoms.

**Conclusion:** Surgery for chronic rhinosinusitis improves nasal discharge globally, with particular benefit to need to blow nose and runny nose on the SNOT-22. Patients with nasal polyps see larger degrees of improvement compared to those without polyps. However, patients without nasal polyps also experience significant improvement in discharge.

**Keywords:** nasal polyps; postnasal drip; revision; rhinorrhea.

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- [62 references](#)

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Curr Opin Allergy Clin Immunol

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. 2025 Feb 1;25(1):10-18.

doi: 10.1097/ACI.0000000000001054. Epub 2024 Dec 6.

## [Update on aspirin exacerbated respiratory disease with chronic rhinosinusitis](#)

[Jason R Gandre](#)<sup>1</sup>, [Dennis K Ledford](#)<sup>2</sup>

Affiliations Expand

- PMID: 39641754
- DOI: [10.1097/ACI.0000000000001054](https://doi.org/10.1097/ACI.0000000000001054)

### Abstract

**Purpose of review:** This review provides the current understanding on the mechanism, diagnosis, and treatment of aspirin exacerbated respiratory disease (AERD) with chronic rhinosinusitis (CRS).

**Recent findings:** Updates focus on the current understanding of type 2 inflammation as a disease driver, alterations in gene expression in nasal polyps, and use of biologics in treating aspirin exacerbated respiratory disease. Recent findings include altered expression of GATA binding protein 3 (GATA3), interleukin (IL)-4, IL-5, and IL-17 in nasal polyps supports the current understanding that type 2 inflammation predominantly drives the pathophysiology of AERD with CRS. From a clinical standpoint, biologics offer an effective treatment option to address type 2 inflammation. Biologics should not be favored over endoscopic sinus surgery and aspirin desensitization with daily aspirin therapy (unless contraindication are present) due to high associated cost and failure to achieve remission.

**Summary:** This review outlines the current approach for diagnosis and treatment of aspirin exacerbated respiratory disease with a focus on desensitization protocols, the importance of endoscopic sinus surgery, the role of biologics, and the use of leukotriene modulators.

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. 2025 Feb 1;25(1):41-46.

doi: 10.1097/ACI.0000000000001051. Epub 2024 Dec 6.

[New insights into the mechanisms of aspirin-exacerbated respiratory disease](#)

[Tanya M Laidlaw](#)<sup>1</sup>

Affiliations Expand

- PMID: 39641750
- PMCID: PMC11695142 (available on 2026-02-01)
- DOI: [10.1097/ACI.0000000000001051](https://doi.org/10.1097/ACI.0000000000001051)

Abstract

**Purpose of review:** Aspirin-exacerbated respiratory disease (AERD), a syndrome characterized clinically by asthma, chronic rhinosinusitis with nasal polyposis, and respiratory reactions to aspirin and other cyclooxygenase-1 inhibitors, is an inflammatory condition of the respiratory tract that is often severe and challenging to treat. There have been several recent advances in our understanding of the underlying pathology of the disease. These have been paralleled by welcome advances in the availability of targeted treatment options for patients with AERD.

**Recent findings:** Spurred in part by results from trials of targeted biologic therapies, along with single cell genomics, there is now clear evidence that the chronic respiratory inflammation in AERD is driven by combination of local tissue factors. These include abnormalities in effector cell populations, with increased accumulation and activation of mast cells and plasma cells in the nasal polyp, along with notable epithelial barrier dysregulation. The key mediators now identified include high levels of both type 2 inflammatory cytokines (IL-4, IL-5, IL-13) and cytokines involved in broader inflammatory pathways (IL-33, TSLP, IL-6, oncostatin

M), as well as the overproduction of cysteinyl leukotrienes, and the underproduction of prostaglandin E<sub>2</sub>.

**Summary:** This review covers the latest insights into the immunopathogenesis of and targeted treatment of AERD, including the roles of lipids, effector cells, and inflammatory cytokines, and discusses unanswered questions regarding its pathogenesis and potential future therapies.

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**Conflict of interest statement**

**Conflicts of Interest:** TM Laidlaw has served on scientific advisory boards for AstraZeneca, GlaxoSmithKline, Sanofi-Genzyme, Novartis, Eli Lilly, and Regeneron.

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6

**Review**

**Curr Opin Otolaryngol Head Neck Surg**

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. 2025 Feb 1;33(1):1-6.

doi: 10.1097/MOO.0000000000001022. Epub 2024 Nov 27.

[Chronic rhinosinusitis and asthma: epidemiology, pathophysiology, morbidity, treatment](#)

[Marlene M Speth](#)<sup>1</sup>, [David T Liu](#)<sup>2</sup>, [Gerold Besser](#)<sup>3</sup>, [Ahmad R Sedaghat](#)<sup>4</sup>

**Affiliations** Expand

- PMID: 39607835
- DOI: [10.1097/MOO.0000000000001022](https://doi.org/10.1097/MOO.0000000000001022)

## Abstract

**Purpose of review:** Especially with the advent of biologics which have originally been prescribed primarily for pulmonary disease, the interconnections between asthma and chronic rhinosinusitis are becoming even more apparent. Biologics can now also be prescribed for chronic rhinosinusitis in some countries. But what is the epidemiology, pathophysiology and treatment of both diseases?

**Recent findings:** This review covers the epidemiology, pathophysiology, morbidity and treatment of both diseases. Specifically, this review highlights the interdependencies of both diseases and potential future treatment options.

**Summary:** This review aims to alert physicians to go beyond treating only one of the diseases, but rather to get a broader picture of the diseases and treatment options.

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7

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## Curr Opin Allergy Clin Immunol

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. 2025 Feb 1;25(1):19-26.

doi: 10.1097/ACI.0000000000001050. Epub 2024 Nov 25.

[The role of macrolides in chronic rhinosinusitis and nasal polyps](#)

[Isao Suzaki<sup>1</sup>](#)

## Affiliations Expand

- PMID: 39584537
- DOI: [10.1097/ACI.0000000000001050](https://doi.org/10.1097/ACI.0000000000001050)

## Abstract

**Purpose of review:** Chronic rhinosinusitis (CRS) is a heterogeneous condition, so personalized treatment based on each patient's pathophysiology is essential, rather than a one-size-fits-all approach. Drug therapy for CRS has evolved significantly in recent years with the introduction of biologics, necessitating a reconsideration of the role of low-dose and long-term administration of a 14-membered ring macrolide (macrolide therapy) in the treatment of CRS. Recent research on the mechanisms of macrolide therapy and its proper use may assist physicians in improving patients' quality of life and reducing disease burden.

**Recent findings:** A classification of the pathogenesis of CRS based on endotype has been proposed, with type 2 inflammation playing a particularly important role as a refractory factor. Macrolide therapy improves CRS via immunomodulatory and anti-inflammatory effects rather than antimicrobial action, and it is expected to be effective in patients with neutrophil-dominant inflammation.

**Summary:** Understanding the effectiveness and limitations of macrolide therapy is critical for making the best treatment decisions, especially when combined with surgery and other pharmacologic therapies. Therefore, selecting appropriate patients for macrolide therapy is critical for achieving adequate therapeutic efficacy.

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8

## Laryngoscope

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. 2025 Feb;135(2):593-601.

doi: 10.1002/lary.31774. Epub 2024 Sep 17.

## [Impact of Biologics on Surgery in Chronic Rhinosinusitis with Polyps and Allergic Fungal Sinusitis](#)

[Mihai A Bentan](#)<sup>1</sup>, [Graham Pingree](#)<sup>1,2</sup>, [Lawrance Lee](#)<sup>1</sup>, [Thomas Fitzpatrick](#)<sup>1</sup>, [Theodore Schuman](#)<sup>1</sup>

### Affiliations Expand

- PMID: 39290040
- PMCID: [PMC11725712](#)
- DOI: [10.1002/lary.31774](#)

### Abstract

**Objective:** To compare the efficacy of th2-targeted biologic medications (dupilumab, omalizumab, and mepolizumab) on absolute risk reduction (ARR) of functional endoscopic sinus surgery (FESS) in patients with chronic rhinosinusitis with nasal polyposis (CRSwNP) and allergic fungal rhinosinusitis (AFRS).

**Methods:** The TriNetX Research Network database was queried for each mAb's market lifespan through March 2024. Adults with CRSwNP were propensity score matched against non-mAb controls based on age, sex, race, and asthma diagnosis. The primary outcome was rate of FESS, with secondary outcomes including inpatient admission, emergency department (ED) visit, and incidence of acute sinusitis. Subgroup analysis was performed for patients with AFRS.

**Results:** All mAbs decreased FESS risk (dupilumab, ARR 11.48%, 95% CI 9.82%-13.15%,  $p < 0.001$ ; omalizumab, ARR 12.02%, 95% CI 4.36%-19.68%,  $p = 0.002$ ; mepolizumab, ARR 10.32%, 95% CI 5.24%-15.40%,  $p < 0.001$ ) in CRSwNP patients. Only dupilumab also reduced risk of inpatient admission (ARR 8.59%, 95% CI 7.04%-10.15%,  $p < 0.001$ ), ED visit (ARR 5.94%, 95% CI 4.28%-7.61%,  $p < 0.001$ ), and acute sinusitis (ARR 2.60%, 95% CI 1.09%-4.12%,  $p = 0.001$ ). In AFRS patients, only dupilumab reduced the risk of all outcomes: FESS (ARR 6.97%, 95% CI 2.86%-11.09%,  $p = 0.001$ ), inpatient admission (ARR 16.93%, 95% CI 11.30%-22.57%,  $p < 0.001$ ), ED visit (ARR 13.15%, 95% CI 7.15%-19.14%,  $p < 0.001$ ), and acute sinusitis (ARR 7.17%, 95% CI 2.18%-12.17%,  $p = 0.005$ ).

**Conclusion:** Although all mAbs reduced FESS risk in CRSwNP, only dupilumab reduced secondary outcomes as well. Similarly, only dupilumab improved all outcomes in AFRS patients. These data demonstrate the potential of mAbs in reducing disease burden and enhancing patient outcomes in CRSwNP and AFRS.

Level of evidence: NA Laryngoscope, 135:593-601, 2025.

Keywords: FESS; allergic fungal sinusitis; chronic rhinosinusitis; endoscopic sinus surgery.

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JAMA Pediatr

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. 2025 Jan 27.

doi: 10.1001/jamapediatrics.2024.5616. Online ahead of print.

[What Parents Should Know About Allergic Rhinitis](#)

[Aparna Prasad](#)<sup>1</sup>, [Jennifer L Thompson](#)<sup>1</sup>, [Lindsay A Thompson](#)<sup>1</sup>

Affiliations Expand

- PMID: 39869362
- DOI: [10.1001/jamapediatrics.2024.5616](#)

*No abstract available*

Plain language summary

This JAMA Pediatrics Patient Page discusses the symptoms, diagnosis, and treatment of allergic rhinitis in children.

Full text links



## chronic cough

1

Review

Otolaryngol Head Neck Surg

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. 2025 Feb;172(2):419-435.

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[Refractory Chronic Cough: A State-of-the-Art Review for Otolaryngologists](#)

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Affiliations Expand

- PMID: 39575647
- DOI: [10.1002/ohn.1019](https://doi.org/10.1002/ohn.1019)

Abstract

**Objective:** Patients with refractory chronic cough (RCC) are being seen in increasing numbers within otolaryngology clinics. Identifying the next steps in the evaluation and management of cough in patients who have had first-line treatment for gastroesophageal reflux, sinonasal disease, pulmonary disease, and angiotensin-converting enzyme inhibitor-related cough is paramount. This state-of-the-art review focuses on emerging treatments for RCC from an otolaryngology perspective.

Data sources: Pubmed.

**Review methods:** The available literature on chronic cough, with a focus on RCC, emerging paradigms concerning pathophysiology, and evolving treatment approaches was reviewed and summarized.

**Conclusions:** Guided by a more detailed understanding of refractory cough physiology, a myriad of new treatment options have been developed to treat RCC. These are primarily aimed at disrupting what is thought to be a hypersensitive cough reflex, whether by a dampening of its sensory inputs or an alteration in motor activity, and are inclusive of neuromodulator treatments, superior laryngeal nerve blockade, vocal fold augmentation, botulinum toxin injection, topical capsaicin, and potentially the eventual use of P2X3 antagonists. Improved laryngopharyngeal reflux diagnosis and management, as well as the potential benefit of behavioral cough suppression therapy, are also discussed.

**Implications for practice:** The literature supporting each of these strategies is growing-and as more patients with RCC seek otolaryngology care, knowledge of these various approaches may improve the overall treatment of this condition.

**Keywords:** P2X3 inhibitor; behavioral cough suppression therapy; capsaicin; chronic cough; laryngeal hypersensitivity; laryngopharyngeal reflux; neuromodulator; superior laryngeal nerve block.

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Otolaryngol Head Neck Surg

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. 2025 Feb;172(2):466-474.

doi: 10.1002/ohn.975. Epub 2024 Sep 26.

## [Are Otolaryngologists Seeing More Cough? Longitudinal Trends and Patterns](#)

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### Affiliations Expand

- PMID: 39324739
- PMCID: [PMC11773429](#)
- DOI: [10.1002/ohn.975](#)

### Abstract

**Objective:** Otolaryngologists play an increasing role in managing cough, but little data exists examining the demographics of this patient population and the referral patterns that influence their access to care. This study sought to elucidate these factors using a longitudinal, nationwide database to minimize sampling bias and identify trends representative of the national population.

**Study design:** Nationally representative survey.

**Setting:** National Ambulatory Medical Care Survey (NAMCS).

**Methods:** Visits with a diagnosis and chief complaint of cough between 2005 and 2019 in NAMCS were examined. Univariable and multivariable analyses were performed to compare patient demographics between visits to surgical specialists, medical specialists, and primary care physicians.

**Results:** Otolaryngologists made up more than 84% of surgical specialist visits. There was a 0.52% [0.20%-0.84%] increase per year in the proportion of visits attributed to surgical specialists. Based on a sensitivity analysis of the multivariable model, Hispanic patients (adjusted odds ratio, aOR: 0.88 [0.78-0.99] vs White) and patients living outside of metropolitan areas (aOR: 0.77 [0.61-0.99] vs living within) were less likely to see surgical specialists than primary care doctors for their cough. Patients who were referred (aOR: 1.47 [1.28-1.72] vs not referred) and with chronic cough (aOR: 1.47 [1.23-1.75] vs acute/subacute) were more likely to see a surgical specialist.

**Conclusion:** Otolaryngologists are increasingly called upon to evaluate and consider treatment for cough. Identifying patient groups with limited access underscores the need for enhanced education about otolaryngologists' roles and integrated care approaches to improve access to specialized cough treatment.

**Level of evidence:** Level 4.

**Keywords:** NAMCS; chronic cough; cough; demographics; epidemiology; laryngology.

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#### Conflict of interest statement

The authors report no conflicts of interest relevant to this work.

- [23 references](#)
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#### Review

#### Cochrane Database Syst Rev

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. 2025 Jan 29;1(1):CD010216.

doi: 10.1002/14651858.CD010216.pub9.

#### [Electronic cigarettes for smoking cessation](#)

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#### Affiliations Expand

- PMID: 39878158

- PMID: [PMC11776059](#)
- DOI: [10.1002/14651858.CD010216.pub9](#)

## Abstract

**Background:** Electronic cigarettes (ECs) are handheld electronic vaping devices that produce an aerosol by heating an e-liquid. People who smoke, healthcare providers, and regulators want to know if ECs can help people quit smoking, and if they are safe to use for this purpose. This is a review update conducted as part of a living systematic review.

**Objectives:** To examine the safety, tolerability, and effectiveness of using EC to help people who smoke tobacco achieve long-term smoking abstinence, in comparison to non-nicotine EC, other smoking cessation treatments, and no treatment.

**Search methods:** We searched the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, Embase, and PsycINFO to 1 February 2024 and the Cochrane Tobacco Addiction Group's Specialized Register to 1 February 2023, reference-checked, and contacted study authors.

**Selection criteria:** We included trials randomizing people who smoke to an EC or control condition. We included uncontrolled intervention studies in which all participants received an EC intervention. Studies had to report an eligible outcome.

**Data collection and analysis:** We followed standard Cochrane methods for screening and data extraction. We used the risk of bias tool (RoB 1) and GRADE to assess the certainty of evidence. Critical outcomes were abstinence from smoking after at least six months, adverse events (AEs), and serious adverse events (SAEs). Important outcomes were biomarkers, toxicants/carcinogens, and longer-term EC use. We used a fixed-effect Mantel-Haenszel model to calculate risk ratios (RRs) with a 95% confidence interval (CI) for dichotomous outcomes. For continuous outcomes, we calculated mean differences. Where appropriate, we pooled data in pairwise and network meta-analyses (NMA).

**Main results:** We included 90 completed studies (two new to this update), representing 29,044 participants, of which 49 were randomized controlled trials (RCTs). Of the included studies, we rated 10 (all but one contributing to our main comparisons) at low risk of bias overall, 61 at high risk overall (including all non-randomized studies), and the remainder at unclear risk. Nicotine EC results in increased quit rates compared to nicotine replacement therapy (NRT) (high-certainty evidence) (RR 1.59, 95% CI 1.30 to 1.93;  $I^2 = 0\%$ ; 7 studies, 2544 participants). In absolute terms, this might translate to an additional four quitters per 100 (95% CI 2 to 6 more). The rate of occurrence of AEs is probably similar between groups (moderate-certainty evidence (limited by imprecision)) (RR 1.03, 95% CI 0.91 to 1.17;  $I^2 = 0\%$ ; 5 studies, 2052 participants). SAEs were rare, and there is insufficient evidence to determine whether rates differ between groups due to very serious imprecision (RR 1.20, 95% CI 0.90 to 1.60;  $I^2 = 32\%$ ; 6 studies, 2761 participants; low-certainty evidence). Nicotine EC probably results in increased quit rates compared to non-nicotine EC (moderate-certainty evidence, limited by imprecision) (RR 1.46, 95% CI 1.09 to 1.96;  $I^2 = 4\%$ ; 6 studies, 1613 participants). In absolute terms, this might lead to an additional three quitters per 100 (95% CI 1 to 7 more). There is

probably little to no difference in the rate of AEs between these groups (moderate-certainty evidence) (RR 1.01, 95% CI 0.91 to 1.11;  $I^2 = 0\%$ ; 5 studies, 840 participants). There is insufficient evidence to determine whether rates of SAEs differ between groups, due to very serious imprecision (RR 1.00, 95% CI 0.56 to 1.79;  $I^2 = 0\%$ ; 9 studies, 1412 participants; low-certainty evidence). Compared to behavioural support only/no support, quit rates may be higher for participants randomized to nicotine EC (low-certainty evidence due to issues with risk of bias) (RR 1.96, 95% CI 1.66 to 2.32;  $I^2 = 0\%$ ; 11 studies, 6819 participants). In absolute terms, this represents an additional four quitters per 100 (95% CI 3 to 5 more). There was some evidence that (non-serious) AEs may be more common in people randomized to nicotine EC (RR 1.18, 95% CI 1.10 to 1.27;  $I^2 = 6\%$ ; low-certainty evidence; 6 studies, 2351 participants) and, again, insufficient evidence to determine whether rates of SAEs differed between groups (RR 0.93, 95% CI 0.68 to 1.28;  $I^2 = 0\%$ ; 12 studies, 4561 participants; very low-certainty evidence). Results from the NMA were consistent with those from pairwise meta-analyses for all critical outcomes. There was inconsistency in the AE network, which was explained by a single outlying study contributing the only direct evidence for one of the nodes. Data from non-randomized studies were consistent with RCT data. The most commonly reported AEs were throat/mouth irritation, headache, cough, and nausea, which tended to dissipate with continued EC use. Very few studies reported data on other outcomes or comparisons; hence, evidence for these is limited, with CIs often encompassing both clinically significant harm and benefit.

**Authors' conclusions:** There is high-certainty evidence that ECs with nicotine increase quit rates compared to NRT and moderate-certainty evidence that they increase quit rates compared to ECs without nicotine. Evidence comparing nicotine EC with usual care or no treatment also suggests benefit, but is less certain due to risk of bias inherent in the study design. Confidence intervals were, for the most part, wide for data on AEs, SAEs, and other safety markers, with no evidence for a difference in AEs between nicotine and non-nicotine ECs nor between nicotine ECs and NRT, but low-certainty evidence for increased AEs compared with behavioural support/no support. Overall incidence of SAEs was low across all study arms. We did not detect evidence of serious harm from nicotine EC, but longer, larger studies are needed to fully evaluate EC safety. Our included studies tested regulated nicotine-containing EC; illicit products and/or products containing other active substances (e.g. tetrahydrocannabinol (THC)) may have different harm profiles. The main limitation of the evidence base remains imprecision due to the small number of RCTs, often with low event rates. Further RCTs are underway. To ensure the review continues to provide up-to-date information to decision-makers, this is a living systematic review. We run searches monthly, with the review updated when relevant new evidence becomes available. Please refer to the Cochrane Database of Systematic Reviews for the review's current status.

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#### Conflict of interest statement

RB has been an applicant and principal investigator on project grants to carry out research in tobacco control from the National Institute for Health Research (NIHR) and Cancer Research UK. RB is principal investigator of an ongoing study listed in

**this review. RB is a Cochrane editor but was not involved in the editorial process for this review.**

**CB was principal investigator on the ASCEND e-cigarette trial reported in the Cochrane review and a co-investigator on the ASCEND II trial and several other studies included in the review. CB reports research grants from the Health Research Council of NZ, the Heart Foundation of NZ and the NZ Ministry of Health (Monitoring the Illicit Tobacco Trade in NZ), the NZ Ministry of Foreign Affairs and Trade (estimating the numbers of tobacco and vaping retailers in NZ) and Auckland Council (Evaluation of the Smokefree Auckland Project). CB reports research grants from: Wellcome Trust UK, REFLECT Cool roofing trial; Health Research Council of NZ, Cess@tion trial, FASD studies; The University of Auckland Transdisciplinary Ideation Fund for The Collective website; Putahi Manawa Centre for Research Excellence in Heart Health Integrated Research Module grant; US NIH (via Wake Forest University): CENIC study; Education NZ Smoking cessation in China; Marsden Fund (NZ): Respiratory effects of vaping. He has recently led a project funded by Pfizer (NZ) on chronic disease management. CB is President of the Society for Research on Nicotine & Tobacco; Member of the Expert Working Group on Tobacco, Health Coalition Aotearoa; Member of the Scientific Advisory Committee of the Cancer Society of NZ; Member of the Scientific Advisory Committee of the RESPIRE research programme, University of Edinburgh; Member of the CREATE Tobacco Endgame Centre of Research Excellence, Australia. CB has carried out independent contractor consultancy for Johnson and Johnson in 2020 on NRT and for Kenvue Inc. regarding setting up an ASEAN regional smoking cessation networking board.**

**ARB's work on this review has been supported by Cancer Research UK Project Award funding. This is not deemed a conflict of interest.**

**PH was principal investigator on three of the trials included in this review, two funded by NIHR and one by CRUK.**

**JHB has received support for this work from the Cochrane Review Support Programme and the University of Oxford's Returning Carer's Fund. JHB has been an applicant and principal investigator on project grants to carry out research in the area of tobacco control from the National Institute for Health Research and Cancer Research UK. None of these are deemed conflicts of interest. JHB is a Cochrane editor but was not involved in the editorial process for this review.**

**NL has received payment for lectures on systematic review methodology (Oxford University Hospitals NHS Foundation Trust), and has been an applicant and principal investigator on project funding to carry out research in the area of tobacco control from the NIHR Evidence Synthesis programme, Cancer Research UK (charity), Clarion Futures (charity), Oxfordshire County Council and the NIHR Oxfordshire and Thames Valley ARC, Greater Manchester NHS Integrated Care and the NIH. None of this is deemed a conflict of interest.**

**JLB was employed by the University of Oxford to work as a Managing Editor and Information Specialist for the Cochrane Tobacco Addiction Review Group before becoming an author on this review. During this time, he was involved in the editorial processing of the review. He is now an Editor for Cochrane. Since becoming an author, he has not been involved in the editorial process for this review. Core infrastructure funding for the Cochrane Tobacco Addiction Group was provided by**

the NIHR to the University of Oxford. JLB is an author of a trial included in this review. He was not involved in the screening, extraction, or quality appraisal of this review.

HM is an employee of Te Whatu Ora-Health New Zealand. HM holds fellowships with New Zealand College of Public Health Medicine (NZCPHM represents public health medicine specialists); and the Society of Lifestyle Medicine. HM is a Professor in Public Health Interventions, University of New South Wales, National Drug and Alcohol Research Centre and provides mentorship and advice for the Tobacco Research Group. He is currently a named investigator on three smoking cessation trials that are all funded by the Australian National Health and Medical Research Council (NHMRC). HM is a named investigator on a smoking cessation trial at Queen Mary University of London, funded by the National Institute of Health Research. HM is a named investigator on a study that examines an approach to prevent e-cigarette use among adolescents at the University of Sydney, funded by the Australian National Health and Medical Research Council (NHMRC). HM is a co-investigator on a number of studies included in this review. HM is a Board Member, Rotorua Community Youth Centre Trust.

CN has received an honorarium from Vox Media for filming a 'nicotine explainer' on the role of nicotine in addiction. This is not deemed a conflict of interest. CN is a member of the advisory council for 'Action on Smoking and Health (ASH)'. CN was co-PI on the Cessation of Smoking Trial in the Emergency Department trial (CoSTED) (NIHR129438; Pope 2024) included in this review.

TM is funded by the National Institute for Health Research (NIHR) Complex Reviews Support Unit (CRSU) and supported by the NIHR Applied Research Collaboration East Midlands (ARC EM) and Leicester Biomedical Research Centre (BRC). The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

NAR has received royalties from UpToDate, Inc. for chapters on electronic cigarettes and occasional fees from academic hospitals or professional medical societies for lectures on smoking cessation that include discussion of electronic cigarettes. NAR was a member of the committee that produced the 2018 National Academies of Science, Engineering, and Medicine's Consensus Study Report on the Public Health Benefits of E-cigarettes. She was unpaid for this work. NAR is employed by Massachusetts General Hospital (MGH). Outside the topic of e-cigarettes, NAR is a consultant for Achieve LifeSciences, which is developing an investigational smoking cessation medication for FDA approval (cytisine) and her institution (MGH) receives a grant from the company as a site for a clinical trial testing the safety and efficacy of cytosine. NAR holds grants from NIH for research work.

AT's work on this review has been supported by the Nuffield Department of Primary Care Health Sciences at the University of Oxford. This is not deemed a conflict of interest.

TT has no known conflicts of interest. TT is a Cochrane editor but was not involved in the editorial process for this review.

ADW's work on this review has been supported by Cancer Research UK Project Award funding. This is not deemed a conflict of interest.

## Update of

- doi: [10.1002/14651858.CD010216.pub8](https://doi.org/10.1002/14651858.CD010216.pub8)
- [491 references](#)
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. 2025 Jan 27;184(2):155.

doi: [10.1007/s00431-024-05961-1](https://doi.org/10.1007/s00431-024-05961-1).

[Effect of azithromycin combined with fluticasone propionate aerosol inhalation on immune function in children with chronic cough caused by Mycoplasma pneumoniae infection](#)

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Affiliations Expand

- PMID: 39870897
- DOI: [10.1007/s00431-024-05961-1](https://doi.org/10.1007/s00431-024-05961-1)

Abstract

This research aimed to describe the effect of azithromycin combined with fluticasone propionate aerosol inhalation on immune function in children with chronic cough caused by Mycoplasma pneumoniae (MP) infection. This study was a retrospective analysis in which 110 children with chronic cough caused by MP

infection were divided into two groups based on different treatment methods: 58 cases in the control group treated with azithromycin dry suspension and 52 cases in the intervention group treated with azithromycin dry suspension and fluticasone propionate inhalation aerosol. Lung function, inflammatory factors, immune indicators, laboratory-related indicators, adverse reactions, and therapeutic effects were compared between the two groups. Compared with the pre-treatment period, levels of FEV1, FVC, and PEF increased post-treatment in both groups, with higher levels observed in the intervention group (all  $P < 0.05$ ). IL-17, IL-6, and IL-10 levels decreased post-treatment in both groups, with the intervention group showing lower levels (all  $P < 0.05$ ). The levels of IgG, IgA, IgM, CRP, ESR, and PCT decreased in both groups, with the intervention group showing lower levels (all  $P < 0.05$ ). Higher treatment effectiveness rates were observed in the intervention group compared to the control group ( $P < 0.05$ ). The incidence of adverse reactions did not differ significantly between the two groups ( $P > 0.05$ ).

**Conclusion:** Azithromycin dry suspension combined with fluticasone propionate aerosol inhalation in children with chronic cough due to MP infection reduces inflammatory factors, improves immune function, and enhances treatment efficacy.

**What is known:** • The addition of oral azithromycin has demonstrated significant efficacy in treating cough caused by chronic respiratory disease, and inhaling fluticasone propionate has a more significant systemic impact than other corticosteroids.

**What is new:** • Azithromycin dry suspension combined with fluticasone propionate aerosol inhalation in children with chronic cough due to MP infection reduces inflammatory factors, improves immune function, and enhances treatment efficacy.

**Keywords:** Mycoplasma pneumoniae; Aerosol inhalation; Azithromycin; Fluticasone propionate; Immunization.

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**Conflict of interest statement**

**Declarations. Ethical approval and consent to participate:** This study was approved by South Hospital of Ganzhou People's Hospital's ethical committee (approval number: 20190112), and conformed to the Helsinki Declaration. Patients' family members or guardians provided written informed consent. **Competing interests:** The authors declare no competing interests.

- [34 references](#)

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. 2025 Jan 27;63(2):22-26.

doi: 10.1136/dtb.2024.000048.

[What role for ▼ gefapixant in chronic cough?](#)

*No authors listed*

- PMID: 39870393
- DOI: [10.1136/dtb.2024.000048](https://doi.org/10.1136/dtb.2024.000048)

*No abstract available*

Keywords: Cough; Primary Health Care.

## "bronchiectasis"[MeSH Terms] OR bronchiectasis[Text Word]

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J Allergy Clin Immunol Glob

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. 2024 Nov 1;4(1):100364.

doi: 10.1016/j.jacig.2024.100364. eCollection 2025 Feb.

[Refractory phenotype of \*Aspergillus\*-sensitized asthma with bronchiectasis and allergic bronchopulmonary aspergillosis](#)

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#### Collaborators, Affiliations Expand

- PMID: 39659740
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- DOI: [10.1016/j.jaciq.2024.100364](#)

#### Abstract

**Background:** Sensitization to *Aspergillus*, mucus plugs, and bacterial colonization may coexist and relate to a refractory phenotype during follow-up in asthma with bronchiectasis and allergic bronchopulmonary aspergillosis (ABPA).

**Objective:** This study aimed to clarify the features of *Aspergillus*-sensitized refractory asthma with bronchiectasis and determine the refractory phenotype in this population and ABPA.

**Methods:** This study included cases of the oldest available *Aspergillus fumigatus*-specific IgE data and chest computed tomography images from a nationwide survey of refractory asthma with bronchiectasis. The characteristics of the *A fumigatus*-IgE positive (*Af* sIgE<sup>+</sup>) group were investigated and compared with its nonsensitized counterpart (*Af* sIgE<sup>-</sup>) and ABPA group. Cluster analysis was conducted to determine the refractory phenotype.

**Results:** The *Af* sIgE<sup>+</sup> group (n = 35) demonstrated type 2 inflammation levels intermediate between the ABPA (n = 42) and *Af* sIgE<sup>-</sup> (n = 38) groups while exhibiting higher blood monocyte counts than the *Af* sIgE<sup>-</sup> group. Cluster analysis conducted in patients with ABPA and *Af* sIgE<sup>+</sup> newly determined 2 clusters: one was characterized by a younger age of asthma onset with fungal detection in sputum, and the other was characterized by mucus plugs and inflammation with eosinophils and monocytes, which was significantly related to mucus plugs, airflow limitation, and trend to show exacerbation. In the latter cluster, mucus plugs persisted, and 30% yielded *Pseudomonas aeruginosa* in the sputum <5 years later.

**Conclusion:** The refractory phenotype with persistent mucus plugs was identified in *Aspergillus*-sensitized refractory asthma with bronchiectasis and ABPA. Mucus plug prevention is warranted.

**Keywords:** ABPA; *Aspergillus* sensitization; bronchiectasis; monocyte; mucus plug; refractory asthma.

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## Conflict of interest statement

Supported by the Scientific Assembly of Allergy, Immunology & Inflammation, 10.13039/501100009098 Japanese Respiratory Society, 10.13039/100030831 Novartis Japan, and the 10.13039/100009619 Japan Agency for Medical Research and Development (research grant 24ek0410097 for Allergic Disease and Immunology). Disclosure of potential conflict of interest: K. Asano received lecturer fees from Sanofi, AstraZeneca, and Boehringer Ingelheim outside this work; and received a research grant on Allergic Disease and Immunology from the Japan Agency for Medical Research and Development. K. Fukunaga received lecturer fees from Sanofi, AstraZeneca, GlaxoSmithKline, Kyorin Pharmaceutical, Boehringer Ingelheim, and Novartis Pharma outside this work; and received grants from Boehringer Ingelheim and Chugai Pharmaceutical outside this work. N. Harada received lecturer fees from Sanofi, AstraZeneca, GlaxoSmithKline, Kyorin Pharmaceutical, and Novartis Pharma outside this work; and royalties from Sanofi, AstraZeneca, Daikin Investment, and TOSOH. T. Hirai received lecturer fees from AstraZeneca, Kyorin Pharmaceutical, and Boehringer Ingelheim outside this work. N. Hattori received lecturer fees from Sanofi, AstraZeneca, GlaxoSmithKline, Kyorin Pharmaceutical, Ono Pharmaceutical, MSD, and Pfizer Japan outside this work. T. Kimura received lecture fees from Sanofi, AstraZeneca, GlaxoSmithKline, Eli Lilly Japan, Chugai Pharmaceutical, Novartis Pharma, Bristol Myers Squibb, Meiji Seika Pharma, DAIICHI SANKYO, and MSD outside this work. H. Matsumoto received lecturer fees from Sanofi, AstraZeneca, GlaxoSmithKline, Kyorin Pharmaceutical, and Boehringer Ingelheim; received grants from Kyorin Pharmaceutical, Boehringer Ingelheim, and Teijin Pharma outside this work; and received support from the Japanese Respiratory Society and a research grant from Novartis Japan. O. Matsuno received lecturer fees from Sanofi, AstraZeneca, and GlaxoSmithKline. T. Sakagami received lecturer fees from AstraZeneca, GlaxoSmithKline, Novartis Pharma, and Boehringer Ingelheim outside this work. H. Sugiura received lecturer fees from Sanofi, AstraZeneca, GlaxoSmithKline, Novartis Pharma, and Boehringer Ingelheim outside this work. H. Sunadome reports grants from Philips Japan, ResMed, Fukuda Denshi, and Fukuda Lifetec Keiji outside this work. N. Tanabe received research grants from Daiichi Sankyo and FUJIFILM outside this work. K. Tomii received lecturer fees from Sanofi, AstraZeneca, GlaxoSmithKline, and Novartis Pharma outside this work. A. Yokoyama received lecturer fees from Sanofi, AstraZeneca, GlaxoSmithKline, and Boehringer Ingelheim outside this work. The rest of the authors declare that they have no relevant conflicts of interest.

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. 2025 Feb;211(2):174-193.

doi: 10.1164/rccm.202410-2080ST.

[Assessment of Home-based Monitoring in Adults with Chronic Lung Disease: An Official American Thoracic Society Research Statement](#)

[Yet H Khor](#), [Vitalii Poberezhets](#), [Russell G Buhr](#), [James D Chalmers](#), [Hayoung Choi](#), [Vincent S Fan](#), [Maureen George](#), [Anne E Holland](#), [Hilary Pinnock](#), [Christopher J Ryerson](#), [Rachel Alder](#), [Kerri I Aronson](#), [Teresa Barnes](#), [Roberto Benzo](#), [Surinder S Birring](#), [Jeanette Boyd](#), [Barbara Crossley](#), [Ron Flewett](#), [Michael Freedman](#), [Toni Gibson](#), [Linzy Houchen-Wolloff](#), [Uma M Krishnaswamy](#), [John Linnell](#), [Fernando J Martinez](#), [Catharina C Moor](#), [Hilarry Orr](#), [Andrea A Pappalardo](#), [Isabel Saraiva](#), [Karin Wadell](#), [Henrik Watz](#), [Marlies S Wijsenbeek](#), [Jerry A Krishnan](#)

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- DOI: [10.1164/rccm.202410-2080ST](#)

### Abstract

**Background:** There is increasing interest in the use of home-based monitoring in people with chronic lung diseases to improve access to care, support patient self-management, and facilitate the collection of information for clinical care and research. However, integration of home-based monitoring into clinical and research settings requires careful consideration of test performance and other attributes. There is no published guidance from professional respiratory societies to advance the science of home-based monitoring for chronic lung disease. **Methods:** An international multidisciplinary panel of 32 clinicians, researchers, patients, and caregivers developed a multidimensional framework for the evaluation of home-based monitoring in chronic lung disease developed through consensus using a modified Delphi survey. We also present an example of how the framework could be used to evaluate home-based monitoring using spirometry and pulse oximetry in adults with asthma, bronchiectasis/cystic fibrosis, chronic obstructive pulmonary disease, and interstitial lung disease. **Results:** The PANACEA framework includes seven domains (test Performance, disease mANagement, Cost, patient Experience, clinician Experience, researcher Experience, and Access) to assess the degree to which home-based monitoring assessments meet the conditions for clinical and research use in chronic lung disease. Knowledge gaps and recommendations for future research of home spirometry and pulse oximetry in asthma, bronchiectasis/cystic fibrosis, chronic obstructive pulmonary disease, and interstitial lung disease were identified. **Conclusions:** The development of the

PANACEA framework allows standardized evaluation of home-based monitoring in chronic lung diseases to support clinical application and future research.

Keywords: chronic lung disease; home spirometry; home-based monitoring; pulse oximetry.

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3

Observational Study

Ann Am Thorac Soc

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. 2025 Feb;22(2):216-225.

doi: 10.1513/AnnalsATS.202404-340OC.

[Long-Term Lung Function and \*Pseudomonas aeruginosa\* Infection in Genotyped Primary Ciliary Dyskinesia](#)

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Affiliations Expand

- PMID: 39447114
- DOI: [10.1513/AnnalsATS.202404-340OC](https://doi.org/10.1513/AnnalsATS.202404-340OC)

Abstract

Rationale: Primary ciliary dyskinesia (PCD) is a rare genetic disorder characterized by progressive lung disease. *Pseudomonas aeruginosa* is a major pathogen in this

disease and is known to impact lung function. Previous genotype-phenotype studies have been limited by cross-sectional designs, isolated adult or pediatric populations, small numbers, or short follow-up durations. Objectives: We aimed to explore long-term lung function in PCD grouped by genotypes and ultrastructural defects, considering the influence of *P. aeruginosa*. Methods: In this retrospective observational study, we analyzed 43 years of spirometry and 20 years of microbiology data. Using linear mixed-effects models, we estimated forced expiratory volume in 1 second z-score trends and compared them at ages 10, 25, and 50 years, whereas generalized estimating equations were used to assess *P. aeruginosa* prevalence between groups. In a secondary analysis, we matched spirometry and microbiology samples to evaluate the influence of *P. aeruginosa* on lung function. Results: We included 127 genotyped patients, 6,691 spirometry measurements, and 10,082 microbiology samples. *CCDC39* and *CCDC40* variants showed early-onset and sustained decline in lung function, whereas *DNAH11* and *HYDIN* variants demonstrated relative stability. Lung function in the proximity of positive *P. aeruginosa* cultures was on average 0.06 z-score lower. Despite this, differences between groups remained largely unaffected by *P. aeruginosa*. Conclusions: Long-term lung function in PCD follows discrete genotype-specific profiles and appears independent of *P. aeruginosa* infection. We confirm and extend previous findings of *CCDC39* and *CCDC40* as variants associated with early-onset severe lung function impairment persisting in the long term.

**Keywords:** Pseudomonas aeruginosa; longitudinal lung function; primary ciliary dyskinesia.

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4

Ann Am Thorac Soc

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. 2025 Feb;22(2):208-215.

doi: 10.1513/AnnalsATS.202403-230OC.

## [The Impact of Age of Diagnosis in Children with Primary Ciliary Dyskinesia](#)

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### Affiliations Expand

- PMID: 39269367
- DOI: [10.1513/AnnalsATS.202403-230OC](#)

### Abstract

**Rationale:** The typical symptoms of primary ciliary dyskinesia (PCD) manifest after birth and in early infancy, but diagnosis is often not confirmed during infancy. There is currently a lack of evidence in PCD regarding the impact of the age of the patient at the time of diagnosis on clinical outcomes. **Objective:** To determine whether early diagnosis of PCD is related to improved long-term outcomes. **Methods:** This was a retrospective study of patients diagnosed with PCD between 2000 and 2022. We divided our cohort into three groups according to the age at diagnosis: (1) early diagnosis (age <1 year), typical diagnosis (age 1-7 years), and late diagnosis (age 8-14 years). We compared various clinical long-term outcomes between the groups. **Results:** During the study period, 110 patients were included in the analysis, with 41 patients in the early diagnosis group, 35 in the typical diagnosis group, and 34 in the late diagnosis group. Unexplained neonatal respiratory distress and organ laterality defect were more common in the early diagnosis group, with respective rates in the early, typical, and late diagnosis groups of 80%, 53%, and 61% for neonatal respiratory distress ( $P = 0.045$ ) and 64%, 50%, and 18% for laterality defect ( $P < 0.001$ ). At the end of the first decade of life, patients in the early and typical-age diagnosis groups had better forced expiratory volume in 1 second compared with the late diagnosis group (93.5% and 93.1% vs. 80.2%;  $P = 0.002$ ), but there was no significant change in the annual rate of decline between the groups when diagnosis had been confirmed. Patients diagnosed late had significantly higher rates of pulmonary exacerbations than those diagnosed at a typical age (1.95 vs. 0.75 per year;  $P < 0.01$ ) **Conclusions:** Late diagnosis (age  $\geq 8$  years) was associated with lower forced expiratory volume in 1 second throughout childhood, although, once diagnosed, the annual rate of decline was not different. These findings demonstrate the negative effect of delayed diagnosis in pediatric PCD.

**Keywords:** PCD; early; exacerbation; lung function; prognosis.

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Editorial

Indian J Pediatr

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. 2025 Feb;92(2):109-110.

doi: 10.1007/s12098-024-05246-3. Epub 2024 Aug 22.

[MRI vs. CT: Advancing the Imaging Frontier in Bronchiectasis](#)

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Affiliations Expand

- PMID: 39168944
- DOI: [10.1007/s12098-024-05246-3](https://doi.org/10.1007/s12098-024-05246-3)

*No abstract available*

Conflict of interest statement

Declarations. Conflict of Interest: None.

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. 2025 Jan 30.

doi: 10.1111/jpc.16775. Online ahead of print.

[Surgery for Bronchiectasis: Experience and Outcomes at Starship Children's Hospital, Auckland, New Zealand](#)

[Clara Watson](#)<sup>1</sup>, [Dug Yeo Han](#)<sup>2</sup>, [Catherine A Byrnes](#)<sup>3,4</sup>, [James Hamill](#)<sup>5</sup>, [Philip Morreau](#)<sup>5</sup>, [Elizabeth Edwards](#)<sup>3</sup>

Affiliations Expand

- PMID: 39887574
- DOI: [10.1111/jpc.16775](https://doi.org/10.1111/jpc.16775)

Abstract

**Background:** Surgical management for bronchiectasis is uncommon. This study reviewed the experience of bronchiectasis surgery and subsequent outcomes at a tertiary paediatric centre over a 20 year period.

**Methods:** Retrospective audit of children aged < 18 years who underwent bronchiectasis surgery at Starship Children's Hospital between 2001 and 2021. Cases were identified from clinical coding, with demographics, pre-operative investigations and outcomes obtained from clinical records.

**Results:** Nineteen children (11 females, 42% Pasifika, 26% Māori and 26% New Zealand European) were included. Mean age of bronchiectasis diagnosis was 6.3 years (range 2.1-13.9 years) and mean age of surgery was 8.5 years (range 2.6-15.9 years). Indications for surgery included localised bronchiectasis (n = 7), main burden of multilobar disease in one lobe (n = 5) and persistent lobar collapse (n = 3). Pre-operative investigations included chest computerised tomography scan (68%), bronchoscopy (37%) and overnight oximetry (42%). One child underwent documented pre-operative clinical optimisation. For children with bronchiectasis < 5 years (n = 11), 81% demonstrated improved symptoms, 9% were unchanged and 9% deteriorated. All children with bronchiectasis > 5 years had symptomatic improvement. The mean number of daily symptoms decreased by 2.4 (p < 0.0001).

**Conclusion:** Lobectomy resulted in significant symptomatic improvement in 89% of children. However, pre-operative work-up was variable. The study highlights the importance of establishing a protocol for identification of children with bronchiectasis who would benefit from surgery and developing a consistent preparatory approach to ensure optimal and equitable outcomes.

**Keywords:** bronchiectasis; child; surgery; young adult.

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. 2025 Jan 27;11(1):00505-2024.

doi: 10.1183/23120541.00505-2024. eCollection 2025 Jan.

[Brensocatic in patients with bronchiectasis: subgroup analyses from the WILLOW trial](#)

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Affiliations Expand

- PMID: 39872387
- PMCID: [PMC11770772](#)
- DOI: [10.1183/23120541.00505-2024](#)

Abstract

**Introduction:** Bronchiectasis is a chronic inflammatory airway disease. Brensocatic, an oral, reversible inhibitor of dipeptidyl peptidase 1 (DPP1), reduces pulmonary inflammation by preventing the activation of neutrophil serine proteases. In the phase II WILLOW trial, brensocatic prolonged time to first exacerbation in patients with bronchiectasis. In this *post hoc* analysis we compare clinical outcomes in patients from WILLOW according to baseline disease characteristics.

**Methods:** Adults with bronchiectasis treated with brensocatic (10 or 25 mg) or placebo once daily were analysed by baseline Bronchiectasis Severity Index (BSI)

score ( $\leq 4$  (mild), 5-8 (moderate), or  $\geq 9$  (severe)), exacerbation history (2 or  $\geq 3$  in the previous year), blood eosinophil count ( $< 300$  cells per  $\mu\text{L}$  or  $\geq 300$  cells per  $\mu\text{L}$ ), long-term macrolide use ( $\geq 6$  months; no or yes) and *Pseudomonas aeruginosa* culture at screening (negative or positive). End-points were time to first exacerbation, annualised exacerbation rate, change in lung function from baseline, and safety. All patients who received brensocatib were pooled and compared with placebo.

**Results:** Treatment with brensocatib *versus* placebo was associated with a longer time to first exacerbation (hazard ratio (95% confidence interval), BSI:  $\leq 4$ , 0.28 (0.08-0.96); 5-8, 0.75 (0.35-1.60);  $\geq 9$ , 0.61 (0.35-1.04); prior exacerbations: 2, 0.56 (0.34-0.90);  $\geq 3$ , 0.71 (0.32-1.59); blood eosinophils per  $\mu\text{L}$ :  $< 300$ , 0.66 (0.42-1.06);  $\geq 300$ , 0.49 (0.20-1.20); long-term macrolide use: no, 0.60 (0.38-0.94); yes, 0.60 (0.25-1.45); *P. aeruginosa* culture: negative, 0.54 (0.32-0.92); positive, 0.68 (0.37-1.27)). Safety results were similar across subgroups.

**Discussion:** Patients treated with brensocatib had a numerically longer time to first exacerbation and reduced annualised rate of exacerbation *versus* placebo across all key baseline disease characteristics.

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#### Conflict of interest statement

**Conflict of interest:** J.D. Chalmers reports receiving grants and personal fees from AstraZeneca, Boehringer Ingelheim, GSK, Zambon and Insmmed Incorporated, a grant from Gilead, and personal fees from Novartis and Chiesi; and is an associate editor of this journal. Conflict of interest: M.R. Loebinger reports receiving consulting fees from 30T, AN2 Therapeutics, Armata, AstraZeneca, Boehringer Ingelheim, Chiesi, Electromed, Insmmed Incorporated, MannKind, Parion Sciences, Recode Therapeutics, Savara and Zambon. Conflict of interest: A. Teper, C. Fernandez, S. Fucile, M. Lauterio and V.H. Shih are employees of and shareholders in Insmmed Incorporated. Conflict of interest: R. van der Laan was an employee of Insmmed Incorporated at the time of this study. Conflict of interest: P.J. McShane is site primary investigator for clinical trials with the following pharmaceutical companies: AN2 Therapeutics, Armata, Boehringer Ingelheim, Insmmed Incorporated, Paratek and Renovion; and reports trial steering committee membership for Boehringer Ingelheim and Insmmed Incorporated; and consulting fee from Insmmed Incorporated. Conflict of interest: C.S. Haworth reports receiving consultancy/speaker fees from 30 Technology, AstraZeneca, CSL Behring, Chiesi, Infex, Insmmed Incorporated, Janssen, LifeArc, Mylan, Pneumagen, Shionogi, Tactile Medical, Vertex and Zambon. Conflict of interest: M.L. Metersky reports receiving consulting fees from AN2 Therapeutics, Boehringer Ingelheim, Insmmed Incorporated, Renovion, Tactile Inc. and Zambon.

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